Index to Volume 32

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How to Use This Index

This index is of similar form to the Cumulative Indexes of this journal, covering, respectively, Volumes 1–10, Volumes 11–20, and Volumes 21–30, and is composed of two main divisions: the Author Index and the Subject Index.

The Subject Index to Volume 32 of *The Journal of the Acoustical Society of America* lists the titles of all the papers, abstracts, and patents under thirteen section headings as follows: 0, General, Unclassified; 1, Acoustical Society of America; 2, Architectural Acoustics; 3, Books, Bibliographies, and Surveys; 4, The Ear and Hearing; 5, Applied Acoustics, Instruments and Apparatus; 6, Musical Instruments and Music; 7, Noise; 8, Standards; 9, Speech and Singing; 10, Ultrasonics (Supersonics); 11, Waves and Vibrations; 12, Mechanical Vibration and Shock; and 13, Underwater Sound. Each of these sections is further divided into a considerable number of decimally numbered subjects, which are listed below under the heading, "Classification of Subjects." Each subject is divided into eight parts entitled Papers, Letters to the Editor, Abstracts, Subtitles, Patents, Book Reviews, News, and Errata. Under Papers will be found the original titles of all the papers appearing in the journal on that subject. Under Abstracts are listed the titles of the papers presented at meetings. Since a great amount of valuable material appears in the journal in papers whose titles cannot fully describe all the subjects which the papers cover, some subtitles of papers have been indexed under the heading Subtitles. When subtitles covering the material did not appear in the paper, they were written; the captions of some of the figures were also included under this heading. Thus, while the Subtitles portion of the index is informal, it is hoped that it will increase the probability of finding the desired information quickly. All patents appearing in the journal are listed under the heading Patents. New classifications are added from time to time. The year in which classifications are added appears in parentheses after the subject classes.

The reader or his librarian should go over the list of errata classified under 0.1, and either make the indicated corrections in the original papers or enter a note beside the title of the original paper—"See Erratum, Vol. XX, p. XXX."

References on most subjects can be located immediately by a logical use of the Classification of Subjects below. In case the reference sought is of an unusual character such that there is uncertainty as to the subject under which it might have been classified, this can usually be found quite quickly by the process of eliminating the sections and subjects under which it is quite improbable that it might have been listed. In case of doubt, a title has often been listed under a number of subjects.

Obviously, the Author Index is more convenient than the Subject Index when one knows the name of the author of the paper in which he is interested.

The References to Contemporary Papers on Acoustics are identified in each issue by the same decimal numbers listed below, and may be consulted for references in other journals than our own. In Volume 32 these references will be found on pages 147, 417, 619, 891, 1166, and 1475.

Classification of Subjects

0. General, Unclassified

0.1 Errata
0.2 Conferences, Lectures, and Announcements, not of the Acoustical Society
0.3 Nonacoustical Theories
0.4 Nonacoustic Devices

1. Acoustical Society of America

1.1 General, Unclassified
1.2 Constitution and Bylaws
1.3 History
1.4 Honorary Members
1.5 Meetings
1.6 Members and Membership Lists
1.7 Committee Activities

2. Architectural Acoustics

2.1 General, Unclassified
2.2 Auditorium Design. (See also 7.6.)
2.3 Studies of Existing Auditoria and Acoustic Enclosures
2.4 Sound Absorption, Theory and Methods of Measurement of. (See also 2.5.)
2.5 Materials for Sound Absorption. Values of Absorption Coefficients and Acoustic Impedances
2.6 Noise Reduction by Increased Room Absorption
2.7 Reverberation and Echoes. (See also 2.3, 2.4, 2.8, 2.9, and 2.10.)
2.8 Reverberation Measuring Instruments. (See also 2.7 and 5.15.)
2.9 Sound Transmission, Theory and Methods of Measurement of. (See also 2.10.)
2.10 Sound Insulating Structures. Values of Transmission Coefficients
2.11 Vibration Insulating Supports. (See also 5.21 and 12.3i.)
2.12 Damping of Panels
2.13 Anechoic Chamber Design. Wedges

3. Books, Bibliographies, and Surveys

3.1 Books and Book Reviews
3.2 Bibliographies
3.3 Patents
3.4 Surveys, Historical and Philosophical Literature

4. The Ear and Hearing

4.1 General, Unclassified
4.2 Anatomy and Physiology of the Ear
4.3 Binaural Hearing. Localization
4.4 Deafness. (See also 5.5.)
4.4.5 Auditory Fatigue, Temporary Threshold Shift

4.5 Instruments Relating to Hearing, and for the Testing of Hearing. (See also 5.5.)
4.6 Loudness, Threshold Determinations
4.7 Masking. (See also 5.5.)
4.8 Phase Effects. (See also 4.3.)
4.9 Pitch
4.10 Subjective Tones
4.11 Theories of Hearing
4.12 Timbre
4.13 Ear Acoustical Impedance
4.14 Ear Protectors, Earplugs
4.15 Perception of Signals. Detection of Signals in Noise

5. Applied Acoustics, Instruments and Apparatus. (See also 2.8, 4.5, 9.6, 10.3, 12.3, 12.3p, 12.3Z, 13.11, 13.11n, and 13.11t.)

5.1 General, Unclassified
5.2 Amplifiers and Attenuators
5.3 Acoustic Impedance Measurement. (See also 11.4 and 12.3Z.)
5.4 Analyzers and Filters, Acoustic and Electric. Oscillographs. (See also 5.15 and 12.3f.)
5.5 Audiometers. (See also 4.4 and 4.5.)
5.5.1 Broadcasting
5.6 Chronographs
5.7 Frequency Standards, Frequency Measuring and Recording Instruments
5.8 Loudspeakers, Horns. (See also 5.13, 5.17, and 5.18.)
5.9 Microphones. Microphone Calibration Equipment and Techniques. (See also 5.18, 12.3p, and 13.11t.)
5.10 Navigational Instruments Using Air Sound. Altitude Measuring Instruments. Sound Ranging (for Underwater Ranging see 13.11n)
5.11 Oscillators, Electrical and Mechanical
5.12 Phase Meters
5.13 Public Address Systems and Sound Picture Installations
5.14 Rayleigh Disks. Radiometers
5.15 Sound Level Meters. Level Recorders. Sound Pressure Measurement. (See also 5.4.)
5.16 Sound Recording and Reproducing. General
5.16d Disk Recording (including cutting and embossing)
5.16f Film Recording (by photographic means)
5.16m Magnetic Recording
5.17 Telephones, Telephone Earphones, Intercommunication Systems. (See also 5.13.)
5.18 Transducing Principles, Structures, and Materials, General. (See also 5.8, 5.9, 5.17, 10.3, 12.3p, 13.7, and 13.11t.)
5.18m Magnetic Transducers: Magnetostriction
5.18p Piezoelectric Transducer, Ferroelectrics
5.19 Tuning Forks
5.20 Tone and Wave Synthesizers
5.21 Vibration Devices. Devices for Generating or Damping Vibrations. (See also 12., 12.3, 12.3i, 12.3p, and 12.3v.)

6. Musical Instruments and Music

6.1 General, Unclassified
6.2 Bells, Xylophones. Other Instruments Having Rigid Vibrators
6.3 Brass Wind Instruments (lip vibrated)
6.4 Drums and Other Membranophonic Instruments
6.5 Pipe Organs
6.6 Pianos and Other Keyboard Stringed Instruments
6.7 Violin Family. Stringed Instruments Except Keyboard Type
6.8 Wood Winds
6.9 Electrical Musical Instruments
6.10 Reed Organs. Accordions, Harmonicas

7. Noise

7.1 General, Unclassified
7.2 Annoyance
7.3 Audiograms of Noise
7.4 City Noise
7.5 Frequency Analyses of Noise
7.6 Noise in Buildings. (See also 2.2.)
7.7 Machinery Noise. Mufflers. Noise Silencers
7.8 Noise Generators, Sirens
7.9 Noise of Animals, Biological Noise. (See also 13.9.)
7.10 Aerodynamic Noise, Jet Noise

8. Standards

8.1 General, Unclassified

9. Speech and Singing

9.1 General, Unclassified
9.2 Anatomy and Physiology. Speech Production
9.3 Intelligibility of Speech. Articulation Testing
9.4 Message Reception
9.5 Sounds of Speech. Acoustic Descriptions. Combinatorial and Statistical Properties
9.6 Instruments Relating to Speech
9.9 Singing
9.10 Linguistics, Phonetics, Semantics. Informational Aspects
9.11 Speech Perception
9.12 Systems for Recognition, Transmission, and Generation of Speech

10. Ultrasonics (Supersonics)

10.1 General, Unclassified
10.2 Light Affected by Ultrasonic Waves
10.3 Ultrasonic Instruments. (See also 5.18.)
10.4 Gases, Ultrasonic Velocities, Dispersion, and Absorption. (See also 11.3.)
10.5 Liquids, Ultrasonic Velocities, Dispersion, and Absorption. (See also 13.2 and 13.3.)
10.6 Solids, Ultrasonic Velocities, Dispersion, and Absorption
10.7 Physical Effects of Ultrasonic Waves. (See also 10.2.)
10.8 Chemical Effects of Ultrasonic Waves
10.9 Biological Effects of Ultrasonic Waves

11. Waves and Vibrations. (See also 13.)

11.1 General, Unclassified
11.1.5 Analogies
11.2 Diffraction. Interference. Scattering. Reflection. Echoes, Standing Waves
11.2.1 Gross Movement of Matter by Sound or Vibration. Acoustic Streaming. Chladni Figures. Kundt's Striae. Sensitive Flames. (See also 5.14 and 10.7.)
11.3 Propagation of Sound. Absorption during Propagation. Velocity of Sound. Second Sound. Refraction. Wavelength. Doppler Effect. (See also 10.4, 10.5, 10.6, 13.2, and 13.3.)
11.4 Radiation from Vibrating Objects. Acoustic Impedance. (See also 5.3, 12.3Z, and 13.7.)
11.5 Sounds of Finite Amplitude. Distortion. (See also 12.3 and 13.10.)
11.6 Noise in Tubes, Helmholtz Resonators

11.6.1 Sources of Sound. (See also 7.8 and 11.4.)
11.7 Theory of Waves. (See also 5.4, 11.1.5, and 12.7.)
11.8 Biological Effects of Sound. (See also 10.9 and 12.9.)
11.9 Physical Effects of Sound. (See also 10.7, 10.8, 11.2.1, and 12.10.)

12. Mechanical Vibration and Shock. (See also 5. and 11.)
12.1 General, Unclassified
12.3 Instruments and Apparatus Relating to Vibration and Shock. (See also 5.3, 5.4, 5.9, and 5.21.)
12.3f Mechanical Filters. (See also 5.4.)
12.3i Vibration Isolators, Attenuators and Dampers. (See also 2.11 and 5.21.)
12.3p Vibration Pickups and Indicators, Calibration Equipment and Techniques. (See also 5.9, 5.18, and 13.11t.)
12.3v Vibration Generators. Shake Tables. (See also 5.21.)
12.3Z Mechanical Impedance Measurement. (See also 5.3 and 11.4.)
12.5 Shock. (See also 11.5 and 13.10.)
12.7 Vibration. Theory of Vibrating Systems. (See also 11.7 and 11.1.5.)
12.9 Biological Effects of Vibration and Shock. (See also 10.9 and 11.8.)
12.10 Seismology Seismographs. Geophysical Prospecting. (Started 1960.)

13. Underwater Sound
13.1 General, Unclassified
13.2 Propagation of Sound in Water. Attenuation. Fluctuation
13.3 Velocity of Sound in Water. Refraction. Doppler Effect
13.4 Reflection. Echoes. Structures for Absorbing Sound in Water
13.5 Interference. Diffraction
13.6 Scattering. Reverberation in Water
13.7 Radiation from Objects Vibrating under Water. Acoustical Impedance. Mechanical Impedance. (See also 5.3, 11.4, and 12.3Z.)
13.8 Sound Generation by Fluid Motion, Bubbles, Turbulence, Cavitation, or Splashes
13.9 Noise in Water. Ship Noise. Biological Noises
13.10 Sounds of Finite Amplitude in Water. Explosions. Distortion. Cavitation. (See also 11.5 and 12.5.)
13.11 Instruments Relating to Underwater Sound. General
13.11n Navigational Instruments Using Underwater Sound. Underwater Listening and Echo Ranging Devices. Sonar
13.11t Transducers for Underwater Sound. Transducer Calibration. (See also 5.18.)

Author Index to Volume 32

Numerals in boldface type refer to volume numbers. (A) designates Abstract; (L) designates Letter to the Editor; (T) designates Title only. A separate Author Index to Patent Inventors appears at the end of the regular author index.

Adams, Carl E. Review of *Progress in Non-Destructive Testing. Vol. II* edited by E. G. Stanford and J. H. Fearon. **32**: 1706—1960

Ades, Harlow W. Naval aviation hearing conservation program aboard aircraft carriers. **32**: 1524(A)—1960

—— (see Harbold, G. J.). **32**: 1525(A)—1960

—— (see Tolhurst, G. C.).—**32**: 1524(A)—1960

Adler, Laszlo. Measurement of the nonlinearity parameter in water and xylene. **32**: 934(A)—1960

Allen, Clayton H., P. J. Westervelt, and N. Doelling. Performance of acoustical materials at high sound intensities. **32**: 1509(A)—1960

—— (see Westervelt, Peter J.). **32**: 934(A)—1960

Ancell, James E. Sound pressure spectra of a muted cornet. **32**: 1101—1960

Anderson, F. An experimental pitch indicator for training deaf scholars. **32**: 1065—1960

Anderson, George (see Chick, Bruce). **32**: 186—1960

Anderson, Victor C. Digital array phasing. **32**: 867—1960

Andreae, J. H., C. Jupp, and D. G. Vincent. Compressional relaxation with a tuning fork. **32**: 406(L)—1960

Andrews, G. J. Vibration isolation of a rigid body on resilient support. **32**: 995—1960

Angeluscheff, Z. D. Noise, enzymes, and hearing. **32**: 1525(A)—1960

Ankerman, P. W. and R. A. Rubega. Bistatic scattering from totally reflecting flat plates. **32**: 478—1960

Anzai, Tarō (see Sakurai, Takemaro). **32**: 839—1960

Aproian, Peter and Ralph Woollett. Dynamic strength testing of adhesives and piezoceramics. **32**: 939(A)—1960

Ashley, George H. A 25-msec mechanical audio-frequency delay line. **32**: 1500(A)—1960

Attanasio, C. R. and R. T. Beyer. Propagation of finite amplitude sound in a relaxing medium. **32**: 934(A)—1960

Auberger, Michel and John S. Rinehart. Method for measuring attenuation of ultrasonic longitudinal waves in plastics and rocks. **32**: 1698(L)—1960

Backus, John. Studies of the vibrations of clarinet reeds. **32**: 935(A)—1960

—— Vibrations of the air column and the reed in the clarinet. **32**: 1493(A)—1960

Baker, D. E. (see Spogen, L. R.). **32**: 1621—1960

Balachandran, C. G. and T. D. Northwood. Speech communication in churches. **32**: 920(A)—1960

Ball, J. H. (see Wiener, Francis M.). **32**: 928(A)—1960

Baltrukonis, J. H., W. G. Gottenberg, and R. N. Schreiner. Dynamics of a hollow, elastic cylinder contained by an infinitely long rigid circular-cylindrical tank. **32**: 1539—1960

Barakat, Richard G. Transient diffraction of scalar waves by a fixed sphere. **32**: 61—1960

Barakos, P. A. Stratigraphy of the Hudson submarine canyon area. **32**: 1513(A)—1960

Batzler, William E. (see Lee, Owen S.). **32**: 1514(A)—1960

Becken, Bradford A. Directional distribution of ambient noise in the ocean. **32**: 920(A)—1960

Becken, R. G. (see Zemanek, J.). **32**: 940(A)—1960

Beckerle, John C. Effects of ocean waves on acoustic signals to very deep hydrophones. **32**: 1514(A)—1960

—— Measurements of forward and back scatter from cylinders in an anechoic chamber. **32**: 1525(A)—1960

Beckmann, G. and A. Schilling. *Hörtraining* reviewed by S. Richard Silverman. **32**: 618—1960

Belar, H. (see Olson, H. F.). **32**: 311—1960

Bellin, J. L. S. and R. T. Beyer. Scattering of sound by sound. **32**: 339—1960

——, **Peter J. Westervelt, and R. T. Beyer.** Experimental investigation of a parametric end array. **32**: 935(A)—1960

Benade, Arthur H. *Horns, Strings & Harmony* reviewed by Robert W. Young. **32**: 1473—1960

—— On the mathematical theory of woodwind finger holes. **32**: 1591—1960

—— (see Ormestad, Helmut J.). **32**: 371—1960

Benson, R. W. Combined effects of sonic and gamma irradiation. **32**: 928(A)—1960

Bentwich, Michael. Use of a velocity-potential function in solving the wave equation for viscous media. **32**: 1080(L)—1960

Beranek, Leo L. Audience and seat absorption in large halls. **32**: 661—1960

Bergen, J. T., Editor. *Viscoelasticity* reviewed by R. B. Lindsay. **32**: 1473—1960

Bergmann, Ludwig. Necrology. **32**: 515—1960

Berman, Alan. Spatial correlation of ambient noise. **32**: 920(A)—1960

—— **and A. J. Saur.** Ambient noise as a function of depth. **32**: 915(A)—1960

Beyer, Robert T. Parameter of nonlinearity in fluids. **32**: 719—1960

—— Review of *Absorption and Dispersion of Ultrasonic Waves* by Karl F. Herzfeld and Theodore A. Litovitz. **32**: 519—1960

—— (see Attanasio, C. R.) **32**: 934(A)—1960

—— (see Bellin, J. L. S.). **32**: 339, 935(A)—1960

—— (see Lutsch, A. G.). **32**: 1503(A)—1960

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Bhimasenachar, J. (see Subrahmanyam, S. V.). **32**: 703, 835—1960

Biagi, F. (see Burkhard, M. D.). **32**: 501—1960

Bies, David Alan. An experiment on sound absorption in porous materials. **32**: 917(A)—1960

—— Effect of a reflecting plane on the radiation impedance of a multipole sound source. **32**: 1504(A)—1960

Biesterfeldt, H. J., J. N. Lange, and E. J. Skudrzyk. Vibrations of rods at frequencies below their radial resonance. **32**: 749—1960

Bilger, Robert C. (see Cox, Jerome R., Jr.). **32**: 773(L); 1081 (corrected Letter)—1960

Birch, W. B. (see Dietz, F. T.). **32**: 915 (2 abstracts)—1960

Bird, J. F. Vibrations of thick-walled hollow cylinders: approximate theory. **32**: 1413—1960

——, **R. W. Hart, and F. T. McClure.** Vibrations of thick-walled hollow cylinders: exact numerical solutions. **32**: 1404—1960

Birdsall, T. G. Detection of a signal specified exactly with a noisy stored reference signal. **32**: 1038—1960

Bishop, D. E. Factors determining cruise flight noise levels in a turbojet transport airplane. **32**: 933(A)—1960

Blackstock, David T. Case in which the small-signal approximation is not applicable to sound waves of small amplitude. 32: 934(A)—1960
Blaik, Maurice. Ambient seismic signals in deep-hole geophones. 32: 915(A)—1960
Bland, D. R. *The Theory of Linear Viscoelasticity.* 32: 1473(T)—1960
Bland, R. E. Measurements of the vortex-induced vibration and sound spectra generated by water flowing over a cavity orifice. 32: 921(A)—1960
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Bobber, Robert J. and Gerald A. Sabin. Cylindrical-wave reciprocity parameter. 32: 923(A)—1960
Bodner, S. R. Resonance effects in the measurement of the complex modulus. 32: 916(A)—1960
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Bowles, J. A. (see Cherry, Colin). 32: 884(L)—1960
Bowyer, C. S. (see McKinney, J. E.). 32: 56—1960
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Boykin, Thomas R., Jr. (see Curtis, Allen J.). 32: 1496(A)—1960
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Bracewell, Ronald N., Editor. *Paris Symposium on Radio Astronomy* reviewed by R. B. Lindsay. 32: 618—1960
Brackenridge, J. Bruce. Transverse oscillations of a liquid jet. I. 32: 1237—1960
Brady, P. T. Perception of speech-like sounds characterized by a rapidly changing resonant frequency. 32: 1501(A)—1960
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Brandt, H. Factors affecting compressional wave velocity in unconsolidated marine sand sediments. 32: 171—1960
Bratina, W. J. and D. Mills. Dislocation contribution to the attenuation of ultrasound in ferromagnetics. 32: 922(A)—1960
Breazeale, M. A. Determination of the ratio B/A from optical measurements. 32: 934(A)—1960
—— **and L. E. Hargrove.** Measurement of sound pressure amplitude by optical methods. 32: 926(A), 940(A)—1960
—— **and H. O. Kneser.** Rotational relaxation in hydrogen chloride. 32: 885(L)—1960
Brennan, J. N. (see Nisbet, J. S.). 32: 71—1960
Brewster, John L. Ultrasonic attenuation in vanadium at low temperatures. 32: 1511(A)—1960
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—— (see Kersta, L. G.). 32: 1502(A)—1960
Brigham, G. A. and M. F. Borg. An approximate solution to the acoustic radiation of a finite cylinder. 32: 971—1960
Brillouin, Leon. *Wave Propagation and Group Velocity* reviewed by R. B. Lindsay. 32: 618—1960
Brinkerhoff, D. E. Solution of some common problems of electroacoustics with the aid of a digital computer. 32: 1522(A)—1960
Bronzo, J. A. (see Worley, R. D.). 32: 1507(A)—1960
Brooks, Richard. Determination of the velocity of sound in distilled water. 32: 1422—1960
Brown, M. V. and James Ricard. Fluctuations in surface-reflected pulsed cw arrivals. 32: 1551—1960
Buckley, Oliver Ellsworth. Necrology. 32: 412—1960
Burgess, John C. System for measuring complex compression moduli of elastomers. 32: 1497(A)—1960
Burghorn, Susan E. (see Corliss, Edith L. R.). 32: 1502(A)—1960
Burkhard, M. D., E. L. R. Corliss, W. Koidan, and F. Biagi. Calibration for carrier operated microphones and other reversible transducers. 32: 501—1960
Burlage, S. R. (see Carome, E. F.). 32: 510(L)—1960
Burnett, Edwin D. A system for automatically recording third and higher order intermodulation distortion components. 32: 1520(A)—1960
—— (see Zerlin, Stanley). 32: 1501(A)—1960
Burris-Meyer, Harold and Vincent Mallory. Psychoacoustics, applied and misapplied. 32: 1568—1960
—— **and Vincent Mallory.** *Sound in the Theatre* reviewed by William B. Snow. 32: 521—1960
Burstein, Herman. *Stereo—How It Works* reviewed by Harry F. Olson. 32: 521—1960

Camp, R. T., Jr. (see Tolhurst, G. C.). 32: 1524(A)—1960
Campbell, Richard A. (see Small, Arnold M., Jr.). 32: 1505(A)—1960
Canac, F., Editor. *Acoustique musicale* reviewed by Daniel W. Martin. 32: 617—1960
Cardinell, Richmond L. and Lewis S. Goodfriend. Acoustical design of the Pan American World Airways Terminal at New York International Airport. 32: 1509(A)—1960
—— **and Lewis S. Goodfriend.** Patient reactions to hospital noises. 32: 932(A)—1960
—— (see Goodfriend, Lewis S.). 32: 932(A)—1960
Carlisle, Richard W. (see Levy, Sidney E.). 32: 923(A)—1960
Carome, Edward F. Dispersion measurements in carbon disulfide. 32: 1510(A)—1960
—— **and S. R. Burlage.** Ultrasonic absorption in ethyl acetate. 32: 510(L)—1960
——, **J. L. Hunter, and R. J. Pasquesi.** Measurements of ultrasonic absorption and velocity in silicones. 32: 1510(A)—1960
—— (see Hunter, J. L.). 32: 1523(A)—1960
Carter, R. L. (see Norkus, F. J.). 32: 1147—1960
Case, Agnes Lashlee (see Wendahl, Ronald W.). 32: 919(A)—1960
Catania, A. C., H. L. Lane, and S. S. Stevens. Role of loudness in the speaker's judgment of vocal effort. 32: 919(A)—1960
—— (see Lane, H. L.). 32: 919(A)—1960
Caughey, T. K. Comments on "On the stability of random systems." 32: 1356(L)—1960
Cavanaugh, W. J. (see Watters, B. G.). 32: 1523(A)—1960
Centre National de la Recherche Scientifique, publisher. *Propriétés Optiques et Acoustiques des Fluides Comprimés* reviewed by E. G. Richardson. 32: 416—1960
Cerceo, M., R. Meister, and T. A. Litovitz. Ultrasonic absorption in toluene. 32: 1510(A)—1960
Cherry, Colin and J. A. Bowles. Contribution to a study of the "cocktail party problem." 32: 884(L)—1960
Chick, Bruce, George Anderson, and Rohn Truell. Ultrasonic attenuation unit and its use in measuring attenuation in alkali halides. 32: 186—1960
Christoff, Jerry P. and Paul S. Veneklasen. Acoustic modeling in architecture. 32: 1508(A)—1960
—— (see Veneklasen, Paul S.). 32: 1502(A)—1960
Chrzanowski, Peter, 1910–1960. 32: 1702—1960

—— **and Richard K. Cook.** Radiation of sound by earthquake waves. **32**: 1504(A)—1960
——, **J. M. Young, Gray Greene, and K. T. Lemmon.** Infrasonic waves in the atmosphere associated with geomagnetic disturbances. **32**: 1504(A)—1960
——, **J. M. Young, and H. L. Marrett.** Infrasonic pressure waves from tornadic storms. **32**: 1504(A)—1960
Clark, A. E. and T. A. Litovitz. Ultrasonic measurement of vibrational, rotational isomeric, structural and shear relaxation in isobutyl bromide. **32**: 1221—1960
Clarke, Frank R. Amplitude discrimination as a function of three variables. **32**: 931(A)—1960
—— Confidence ratings, second-choice responses, and confusion matrices in intelligibility tests. **32**: 35—1960
—— Ideal observer and descriptive models in psychophysics. **32**: 1505(A)—1960
Clay, C. S. Array steering in a layered waveguide. **32**: 1508(A)—1960
—— Fluctuations of sound reflected from the sea surface. **32**: 926(A), 1547—1960
Cohen, Alexander and Bernard J. Fine. Auditory discrimination and sleep deprivation. **32**: 925(A)—1960
Coles, J. J. (see Noiseux, D. U.). **32**: 1522(A)—1960
Coles, R. R. A. (see Knight, J. J.). **32**: 800—1960
Cook, Bill D. Determination of finite amplitude distortion by light diffraction. **32**: 336—1960
—— Diffraction of light by ultrasonic waves of various standing wave ratios. **32**: 940(A)—1960
Cook, Richard K. Review of the theory of sound transmission loss. **32**: 1498(T)—1960
—— (see Chrzanowski, Peter). **32**: 1504(A)—1960
Cooper, Franklin S. (see Delattre, Pierre C.). **32**: 1501(A)—1960
Corliss, Edith L. R., Michael Kobal, and Susan E. Burghorn. Reduction of signal-to-noise ratio induced by distortion in speech transmission systems. **32**: 1502(A)—1960
—— (see Burkhard, M. D.). **32**: 501—1960
Cox, Jerome R., Jr., and Robert C. Bilger. Suggestion relative to the standardization of loudness-balance data for the Telephonics TDH-39 earphone. **32**: 773(L); 1081 (corrected Letter)—1960
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Abrams, Daniel. 2,924,660. Compatible picture projection and sound reproduction system and apparatus therefor. 32: 782—1960
Adler, Robert. 2,908,772. Electroacoustical transducer. 32: 432—1960
Albertine, Albert W., Matha M. Miller, and Raymond C. Zaller. 2,877,970. Vibration damping connection. 32: 523—1960
Allen, Clayton H. (see Baruch, Jordan J.). 32: 786—1960
Aller, Paul B. and Archie Gold. 2,941,777. All temperature highly damped vibration isolator. 32: 1490—1960
Allyn, Richard J. 2,829,360. Transducer mounts. 32: 170—1960
Alvarez, Octavio Jose. 2,905,039. Vibrating type oscillator and pickup apparatus. 32: 908—1960
Andersen, Clifford W. 2,850,933. Piano action. 32: 530—1960
—— 2,881,651. Electronic piano. 32: 1096—1960
—— 2,888,851. Damper mechanism for piano. 32: 1096—1960
—— 2,909,093. Piano action. 32: 1488—1960
Anderson, Walter J. 2,854,879. Electrical musical instrument. 32: 530—1960
—— Re. 24,743. Electrical musical instrument. 32: 1487—1960
Andrews, Dallas R. 2,885,488. Magnetic record transducer. 32: 306—1960
Ankerman, Paul W. (see Manley, Fred A.). 32: 300—1960
Arenberg, David L. 2,883,660. Ultrasonic apparatus. 32: 165—1960
Armsby, Bernard Frank (see Ridler, Desmond Sydney). 32: 306—1960
Armstrong, John Noel and Heinz Siegfried Wolff. 2,923,782. Loudspeakers. 32: 905—1960
Ashe, William James and Jack Paul. 2,905,259. Tubular speaker housing. 32: 301—1960
Ashley, William H., Jr. (see Broadhead, Samuel L., Jr.). 32: 161—1960
Augustin, Herbert. 2,911,481. Magnetic head comprising a core of ferrite. 32: 1185—1960
Avedon, Robert C. 2,873,812. High-frequency loudspeaker structure. 32: 301—1960

Babicky, Raymon C. 2,856,805. Microphone pickup for pianos. 32: 1089—1960
Badmaieff, Alexis. 2,834,424. Sound reproducing device. 32: 297—1960
Baird, Raymond C. 2,893,509. Vibration free apparatus. 32: 909—1960
Baker, George Thomas and John Evelyn Wright. 2,907,007. Magnetic recording equipment. 32: 1093—1960
Baker, George W. 2,922,201. Wooden stud partition. 32: 1373—1960
Baldwin, David A. (see Williams, William H.). 32: 793—1960
Ballet, Léon Raymond. 2,917,962. Piano action. 32: 1487—1960
Bangs, Joseph F. and Theodore R. Duncan. 2,916,959. Music comb mounting means. 32: 906—1960
Bann, Michael S. and Herbert O. Lewis. 2,897,439. Magnetostrictive resonant-disk test jig. 32: 431—1960
Bardeen, Thomas. 2,890,438. Seismometer. 32: 781—1960
Barkalow, Clare E. 2,919,882. Vibration-resistant mounting. 32: 1383—1960
Barnes, Ralph Glen. 2,912,063. Muffler. 32: 1715—1960
Barry, Leonard D. 2,885,489. Dual head magnetic recorder. 32: 525—1960
—— 2,902,544. Tapered magnetic head. 32: 1092—1960
Barshefsky, Gustave. 2,897,908. Sound absorbing unit and bundle thereof. 32: 1182—1960
Baruch, Jordan J. and Clayton H. Allen. 2,893,508. Method of and apparatus for acoustic silencing. 32: 786—1960
Bauer, Howard G. 2,892,372. Organ tremulant. 32: 1096—1960
—— 2,892,373. Multiple tremulant for treble tones in electronic musical instruments. 32: 1097—1960
—— 2,911,870. Organ reed support and assembly. 32: 1489—1960
—— (see Osborne, Fred H.). 32: 530—1960
Bazzoni, Charles B., Lacoste G. Ellis, and Alfred C. Winterhalter. 2,940,536. Method and apparatus for analysis of seismic records. 32: 1376—1960
Becker, Eugene C. H. and Victor M. D'Atre. 2,932,474. Vibration mount. 32: 1490—1960
Beitscher, Herbert R. (see Gales, Robert S.). 32: 296—1960
Belar, Herbert (see Olson, Harry F.). 32: 531—1960
Benjamin, Reuben Allen. 2,850,110. Translucent acoustical ceiling panels. 32: 429—1960
Beranek, Leo L. 2,909,235. Muffler. 32: 1715—1960
Bergh, Arndt B. (see Rubens, Sidney M.). 32: 527—1960
Bergman, Donald J. 2,894,598. Exhaust burning muffler. 32: 909—1960
Berry, Carl F. 2,854,789. Sounding toy. 32: 431—1960
Bertsch, Joseph F., Kai H. Hansen, and Robert Schilling. 2,916,284. Air suspension leveling valve. 32: 1382—1960
Beyland, Robert W. 2,906,118. Devices for measuring phonograph stylus pressure. 32: 433—1960
Bick, John D. 2,921,992. Phonograph apparatus. 32: 785—1960
Bincer, Hans (see Boxcer, John R.). 32: 167—1960
Bischof, Walter J. 2,941,183. Multi-range echo sounding system. 32: 1492—1960
Black, Raymond D. 2,913,838. Apparatus for processing acoustic damping material. 32: 1386—1960
Blain, Albert (see Eckert, John Presper, Jr.). 32: 1092—1960
Blankenship, John P. A. 2,925,685. Sound making device for toy guns. 32: 904—1960
Blizard, Robert B., Richard Proskauer, and Victor Vacquier. 2,942,782. Sonar ray tracer. 32: 1718—1960
Bloom, Bertha B. 2,915,121. Music time guide. 32: 529—1960
Blount, Alvie E., Tobias Flatow, and Frank L. Chalmers. 2,897,907. Weight handling mechanism. 32: 781—1960
Bobb, Lloyd J. 2,878,323. Transducers. 32: 301—1960
—— 2,935,575. Loudspeakers. 32: 1375—1960
Bode, Harald. 2,906,960. Electrical musical instrument with frequency divider circuit. 32: 1488—1960
Bodeau, Arthur C. and Eugene R. Shull. 2,913,199. Vibration isolating mounting. 32: 1380—1960

Bodine, Albert G. 2,881,751. Acoustic attenuation of engine detonation shock waves. **32**: 533—1960
Bodine, Albert G., Jr. 2,897,734. Sonic beam earth compacting system. **32**: 780—1960
—— 2,903,242. Suspension system for sonic well drilling or the like. **32**: 782—1960
Boleslav, Ales. 2,840,178. Device for the reproduction of sound. **32**: 298—1960
Bonbrake, Lawrence D. 2,913,198. Sonobuoy dispenser. **32**: 640—1960
Bond, Dwaine Elton. 2,940,212. Noise making toy. **32**: 1485—1960
Bonham, Don L. 2,913,948. Attenuating circuit for electric organ. **32**: 1489—1960
Bonnaffous, Maurice. 2,862,070. Microphone. **32**: 1089—1960
—— 2,862,071. Microphone support. **32**: 1089—1960
Boschi, Antonio. 2,887,173. Sound-absorbing and insulating panel. **32**: 635—1960
Bose, Amar G. 2,915,588. Pressure wave generation. **32**: 636—1960
Bourne, Roland B. and John P. Tyskewicz. 2,904,125. Straight through silencer. **32**: 1187—1960
Bowman, Samuel G. 2,861,146. Pipe organ relay. **32**: 529—1960
—— 2,892,375. Pipe organ assembly. **32**: 1095—1960
—— 2,898,794. Pipe organ valve. **32**: 1095—1960
—— 2,900,164. Pipe organ valves. **32**: 1095—1960
—— 2,910,907. Pipe organ combinations. **32**: 1486—1960
Boxcer, John R. and Hans Bincer. 2,896,098. Ultrasonic probes. **32**: 167—1960
Boyle, Bryan R. (see Murray, George H.). **32**: 1490—1960
Bradford, Robert L. 2,834,423. High fidelity loudspeaker enclosure. **32**: 297—1960
Bradford, Wylie B. 2,897,520. Resilient support assembly. **32**: 789—1960
Brami, Joseph. 2,907,837. Sound reproducing system. **32**: 302—1960
Branden, Leif (see Myrgren, Bengt V.). **32**: 638—1960
Brasseur, Eudore. 2,901,550. Sound recording and reproducing devices. **32**: 1092—1960
Braund, John J. 2,915,134. Loudspeaker apparatus. **32**: 636—1960
Bredehoft, Harold A. 2,892,187. Sound output control for telephone ringers. **32**: 528—1960
Broadhead, Samuel L., Jr., and William H. Ashley, Jr. 2,886,787. Piezoelectric device. **32**: 161—1960
Brodie, George H. 2,857,461. Speaker diaphragm controlled capacitor for negative feedback control. **32**: 299—1960
Broding, Robert A. 2,905,258. Measurement of seismic travel time. **32**: 782—1960
Brooks, Arthur H. 2,901,997. Sound generator. **32**: 310—1960
Brower, David F. 2,897,462. Variable reluctance electromagnetic device. **32**: 434—1960
Brown, Ivan H. and Reuben H. Gordon. 2,917,042. Ultrasonic device. **32**: 910—1960
Brown, Ralph E. 2,827,790. Oscillating test table. **32**: 640—1960
Brown, Richard K. 2,894,595. Measurement of the velocity of sound in fluids. **32**: 169—1960
Brownscombe, Philip J. 2,846,520. Low-frequency loudspeaker. **32**: 298—1960
Brüel, Per Vilhelm and Carl-Axel Elof Tegner. 2,882,989. Sound absorber. **32**: 635—1960
Brunton, Don L. 2,915,598. Spectacle hearing-aid mounting. **32**: 636—1960
Burnett, Henry J. 2,900,039. Pickup device. **32**: 791—1960
Busilacchio, Ido. 2,929,291. Tone modifier for musical instruments. **32**: 1098—1960
Butts, Joseph Raymond. 2,892,371. Pickup. **32**: 1095—1960
Cagen, George. 2,924,672. Headset. **32**: 1485—1960
Camp, Leon W. 2,906,991. Transducer construction employing annular vibrators. **32**: 440—1960
Camras, Marvin. 2,900,443. Magnetic recorder and reproducer for video. **32**: 1091—1960
—— 2,900,444. Means for recording and reproducing video signals. **32**: 1091—1960
Candlin, James E., Jr., and William Van Der Sluys. 2,925,050. Side frame construction and finish. **32**: 1374—1960
Capps, Beryl F. 2,925,750. Music transposing scale computer. **32**: 906—1960
Capron, Robert W. 2,899,653. Transducer. **32**: 434—1960
Carbonneau, Gordon S. 2,906,828. Voice coil connection for loudspeakers. **32**: 302—1960
Carl, Wendel. 2,911,872. Violin breaking-in apparatus. **32**: 530—1960
Carlisle, Charles H. and Tobias Flatow. 2,902,106. Method of determining the dip of geologic formations in the vicinity of a borehole. **32**: 781—1960
—— (see Flatow, Tobias). **32**: 781—1960
Carruthers, Walter W. and Claude L. Kirkpatrick. 2,918,650. Sonar trainer. **32**: 793—1960
Cassinelli, Alfred S. 2,917,964. Brass instrument mouthpiece. **32**: 1486—1960
Castle, Alfred B. 2,938,700. Mounting means. **32**: 1490—1960
Cavanaugh, Richard D. and Thomas P. Goethel. 2,904,302. Vibration isolating assembly. **32**: 790—1960
—— (see Lowe, Russell T.). **32**: 1380—1960
Chalmers, Frank L. (see Blount, Alvie E.). **32**: 781—1960
Chamberlin, Harry C. 2,910,298. Sound reproducing system. **32**: 433—1960
Chambers, Guy R. 2,909,764. Angular position transducer. **32**: 1377—1960
Chambers, Torrence H. 2,934,661. Transducer mounting. **32**: 1378—1960
Chandler, Wesley M. and Paul Fred Heuser. 2,884,901. Silencer for air vibrators. **32**: 165—1960
Charske, Charles J. and Charles L. Hubbard. 2,938,592. Seismic velocity well logging apparatus. **32**: 1376—1960
Christy, Ralph L. and David M. Clark. 2,902,692. Ear protector. **32**: 296—1960
Claras, Carl W. 2,897,289. Magnetic recorder-reproducer. **32**: 637—1960
Clark, David M. (see Christy, Ralph L.). **32**: 296—1960
Clark, Lyle G. 2,942,834. Vibration absorber. **32**: 1491—1960
Clay, Clarence S. 2,906,363. Multiple transduced array. **32**: 782—1960
Clubbs, Bennett A. (see Foscue, Clayton). **32**: 165—1960
Cluwen, Johannes Meyer (see Klinkhamer, Jacob Fredrik). **32**: 780—1960
Coates, George A. 2,853,146. Transmitter with vibratile air coupling. **32**: 298—1960
Coble, Gomer L., Jr., and Manuel A. Garcia. 2,911,207. Vibration absorbing apparatus. **32**: 1379—1960
Cohen, Abraham B. and Sidney E. Levy. 2,845,135. Auxiliary wave propagating and directing attachment for loudspeaker diaphragms. **32**: 298—1960
—— **and Sidney Levy.** 2,852,089. Combined loudspeaker diaphragm and horn. **32**: 298—1960
Colson, Robert J. (see Steinberger, Raymond L.). **32**: 1718—1960
Connell, Lawrence H. 2,892,899. Magnetic recording. **32**: 528—1960
Conrad, Ivan Willard. 2,860,183. Sound reproducing system. **32**: 300—1960
Conway, Theodore David (see Johnson, Albert Ernest). **32**: 527—1960
Cook, Charles J. 2,924,296. Dry muffler and mounting means therefor. **32**: 1716—1960

Corrigan, Harold A. 2,892,033. Audible-visual intercommunication system. 32: 164—1960
Corwin, Merton D. 2,873,638. Piano abstract and assembly. 32: 785—1960
Cousino, Bernard A. 2,911,215. Tape feeding apparatus for magnetic sound recording and reproducing mechanisms. 32: 1710—1960
Coven, Warren B. and John A. Funk. 2,925,738. Plural speed phonograph turntable drive mechanisms. 32: 1709—1960
Crandell, Robert B., Henry C. Maulshagen, and Richard W. Samsel. 2,829,361. Electroacoustic transducer. 32: 310—1960
Crede, Charles E. 2,900,161. Resilient support. 32: 789—1960
—— **and Bertrand S. Furbeck.** 2,900,162. Resilient support. 32: 789—1960
Cronquist, Donald H. 2,905,768. Air head. 32: 1092—1960
Crotty, Francis W. 2,926,019. Phonograph. 32: 1709—1960
Crowley, Matthew D. 2,846,020. Liquid sound deadening device. 32: 436—1960
Culp, Eugene H. (see Hulswit, William H., Jr.). 32: 1714—1960
Cunningham, Clairdon E. 2,942,072. Helmet communication system. 32: 1377—1960
Curioni, Salvatore M. 2,841,235. Sound muffler. 32: 308—1960
Curry, Paul. 2,855,467. Loudspeakers. 32: 299—1960
Curtis, Gerald R. 2,935,710. Electric transducer. 32: 1491—1960
—— **and Joseph P. Gibbs.** 2,909,062. Transducer. 32: 792—1960
Curtis, Westley F. 2,890,091. Ultrahigh-speed level recorder. 32: 162—1960

Da Costa, Harry. 2,903,898. Control linkage for a gramophone change speed friction drive. 32: 432—1960
—— **and James Alexander Lee.** 2,896,953. Tone arm mounting for gramophones. 32: 303—1960
Dahl, Carl B. and Edgar J. Justus. 2,893,487. Silencers for suction rolls. 32: 165—1960
Daly, Thomas A. and Herbert L. Prescott. 2,899,923. Sound damping apparatus for torpedo propulsion mechanisms. 32: 789—1960
Darou, William T., Jr. (see Fuller, Harrison W.). 32: 1711—1960
D'Atre, Victor M. (see Becker, Eugene C. H.). 32: 1490—1960
Davis, Charles C. 2,878,321. Magnetic tape record bearing a sound track and a control track. 32: 305—1960
—— 2,886,652. Magnetic head with adjustable shield for controlling stray magnetic flux. 32: 526—1960
Davis, Jack W. (see Towle, George B.). 32: 1717—1960
Davis, Merlin. 2,900,861. Electronic musical instruments. 32: 1097—1960
DeArmond, Harry. 2,920,522. Musical instrument. 32: 1712—1960
—— **and Leonard N. Meeker.** 2,909,092. Electrical pickups for musical instruments. 32: 308—1960
DeCapite, Richard J. 2,923,370. Portable stereophonic sound system. 32: 905—1960
De Falco, Joseph J. (see Gruber, Joseph J.). 32: 1182, 1373—1960
Dehler, William A. (see Matey, George J.). 32: 639—1960
Deitrickson, Roy H. (see Guier, William). 32: 787—1960
Della Libera, Juan B. 2,910,906. Musical instrument. 32: 435—1960
del Valle, Guillermo A. 2,927,972. Reeling systems. 32: 906—1960
De Niet, Edmond and Derk Kleis. 2,912,521. Magnetic recording apparatus. 32: 1711—1960
Denkhaus, Otto Oskar Siegfried (see Jilski, Theodor Wilhelm Ernst). 32: 302—1960
D'Eustachio, Dominic. 2,853,147. Acoustic filters for air ducts. 32: 436—1960
De Vita, Philip Joseph. 2,861,187. Frequency divider. 32: 531—1960
de Witt, Hermanus Johannes (see Kleis, Derk). 32: 305—1960
Di Biasio, Francisco. 2,903,936. Valve for collecting and eliminating saliva from musical wind instruments. 32: 1486—1960
Dickie, Robert J. 2,932,482. Stabilized mounting system. 32: 1384—1960
Dieter, Norman H., Jr. 2,934,610. Sound-record transducing device for stereophonic and like recording systems. 32: 1710—1960
Di Giovanni, Mario. 2,909,744. Electrical accelerometer. 32: 1385—1960
—— 2,918,641. Electrical strain wire transducers. 32: 1385—1960
Dillenburger, Albert. 2,912,069. Noiseless piston device. 32: 1380—1960
Di Mattia, Alfred L. 2,855,067. Sound-shielding housing for a microphone. 32: 1090—1960
—— 2,933,145. Headphone device. 32: 1577—1960
Dopieralski, Edmund L. 2,911,483. Magnetic recording head structure. 32: 1185—1960
Dorf, Richard H. 2,865,243. Electronic tone generating device. 32: 531—1960
—— 2,919,620. Automatic tuning device for polyphonic instruments. 32: 1713—1960
—— (see Humphrey, John H.). 32: 1096—1960
Dostal, Frank. 2,894,188. Tuning fork with its frequency immune to the effects of gravitation and acceleration. 32: 529—1960
Dostert, Leon E. 2,911,482. Method and apparatus for teaching languages. 32: 638—1960
Dowling, Charles R. 2,874,601. Piano action. 32: 907—1960
Drake, Frederick H. 2,927,795. Phonograph turntable assembly. 32: 1709—1960
Dreher, John J. and Lewis J. Schwartzkopf. 2,904,640. Combination ear-mounted microphone and receiver instrument. 32: 306—1960
Dresser, Willis Robert. 2,899,505. Re-recording mixer for multi-sound track records. 32: 302—1960
Duinker, Simon and Willem Klaas Westmijze. 2,907,834. Magnetic reproducing head. 32: 1093—1960
Duncan, Theodore R. (see Bangs, Joseph F.). 32: 906—1960

Eash, George H. 2,876,005. Recorder-playback instrument employing endless magnetic tape. 32: 304—1960
Eck, George H. 2,898,405. Listening device. 32: 164—1960
Eckel, Oliver C. 2,843,234. Acoustical panel assembly apparatus. 32: 429—1960
Eckert, John Presper, Jr., and Albert Blain. 2,905,767. Protective apparatus for magnetic recording and sensing head. 32: 1092—1960
Eckert, Lewis W. 2,874,796. Method of fabricating a sound absorbing unit from cellulosic material. 32: 523—1960
Edson, James O. and Carl B. H. Feldman. 2,906,955. Derivation of vocoder pitch signals. 32: 309—1960
Efromson, Philip C. 2,925,503. Vibration test apparatus. 32: 1386—1960
Elliott, Daniel R. (see Hulswit, William H., Jr.). 32: 1714—1960
Elliott, Llewellyn J. 2,917,127. Acoustic enclosure for loudspeakers. 32: 636—1960

Ellis, Lacoste G. 2,900,037. Seismographic exploration. 32: 781—1960
—— (see Bazzoni, Charles B.). 32: 1376—1960
Ellison, John V. 2,903,521. Band expansion recorder. 32: 784—1960
Ely, John O., Gerald C. Summers, and Frank C. Karal, Jr. 2,889,001. Velocity dependent acoustic velocity correction. 32: 780—1960
Erath, Louis W. and Paul E. Madeley. 2,902,107. Method and apparatus for compositing seismic exploration results. 32: 782—1960
Ericksen, Helen H. 2,941,436. Music note finders. 32: 1711—1960
Eskilson, Jack E. (see McCutchen, Samuel P., Jr.). 32: 526—1960
Evans, John B. 2,875,787. Pulsation dampener device. 32: 787—1960
Evans, Martin E. 2,944,109. Combined sound and color motion picture and television recording apparatus. 32: 1708—1960
Everett, Wilhelm S. 2,819,775. Vibration absorber. 32: 439—1960
Everitt, Allen L. 2,903,208. Resilient mounting. 32: 790—1960
Everitt, William Littell (see Fairbanks, Grant). 32: 309—1960

Faidley, Hunter Clayton. 2,896,649. Apparatus for cleaning by ultrasonic vibrations. 32: 431—1960
Fairbanks, Grant, William Littell Everitt, and Robert Pierson Jaeger. 2,886,650. Recording device. 32: 309—1960
Faith-Ell, Lars Johan (see Wahlborg, Karl John). 32: 165—1960
Falk, Sven Gustaf. 2,898,116. Mechanism for successively releasing stacked phonograph records. 32: 303—1960
Farrand, William A., Spencer G. Johnston, Lester L. Kilpatrick, and John P. Lekas. 2,899,260. Magnetic disk recorder. 32: 1091—1960
Feagin, Frank J., Malcolm R. MacPhail, and William M. Rust, Jr. 2,928,071. Interpretation of geophysical data. 32: 1184—1960
Fearn, Ward O. 2,890,614. Wooden mouthpieces for brass wind musical instruments. 32: 1095—1960
Fearon, Robert E. (see Silverman, Daniel). 32: 780—1960
Feldman, Carl B. H. (see Edson, James O.). 32: 309—1960
Ferrara, Achille K. 2,902,868. Vibrating equipment. 32: 792—1960
Fialkoff, Samuel. 2,925,593. Table chime. 32: 907—1960
Fielding, Ralph H., Jr. 2,892,034. Vibration detecting instrument. 32: 169—1960
Finch, Horace T. (see Weller, Robert A.). 32: 1379—1960
Fink, Daniel J. 2,924,420. Anti-vibration mount. 32: 1383—1960
Flanagan, James Loton. 2,891,111. Speech analysis. 32: 1099—1960
Flatow, Tobias and Charles H. Carlisle. 2,894,596. Method of determining seismic reflecting subsurfaces. 32: 781—1960
—— (see Blount, Alvie E.). 32: 781—1960
—— (see Carlisle, Charles H.). 32: 781—1960
Fogel, Lawrence J. 2,866,848. Method of improving intelligence under random noise interference. 32: 437—1960
Folse, Kenneth H. 2,898,408. Magnetic drum eraser. 32: 637—1960
Fomenko, Sergei M. 2,908,541. Magnetic recording apparatus. 32: 1184—1960
Fonda, Jay C. 2,908,769. Tape recorder. 32: 1094—1960
Foscue, Clayton and Bennett A. Clubbs. 2,882,969. Silencing means for paper machine suction rolls. 32: 165—1960
Freeman, Roland A. (see Scott, James G.). 32: 1184, 1375—1960
Friedman, Nathan H. 2,893,507. Stethoscope head. 32: 161—1960
Fritzinger, George H. 2,908,767. Juke box and recordation-transfer machine therefor. 32: 433—1960
Fryklund, Robert A. 2,939,105. Echo ranging system. 32: 1386—1960
—— 2,943,296. Sonic apparatus for measuring the level of stored materials. 32: 1485—1960
Fuller, Harrison W., Sidney P. Woodsum, and William T. Darou, Jr. 2,913,536. Magnetic head assemblies. 32: 1711—1960
Funk, John A. (see Coven, Warren B.). 32: 1709—1960
Furbeck, Bertrand S. (see Crede, Charles E.). 32: 789—1960

Gadebusch, Richard Gustave. 2,881,509. Plastic piano action. 32: 1095—1960
Galelli, Giuseppe. 2,901,937. Grooved bow, particularly for stringed musical instruments. 32: 307—1960
Gales, Robert S. and Herbert R. Beitscher. 2,901,751. Noise attenuator. 32: 296—1960
Gallina, Harold. 2,908,771. Sound track fixture. 32: 306—1960
Garcia, Manuel A. (see Coble, Gomer L., Jr.). 32: 1379—1960
Geneslay, Raymond H. J. 2,906,899. Damping systems. 32: 791—1960
Genevay, Jacques. 2,913,538. Automatically repeating talking machine. 32: 432—1960
Genning, Ernst and Gunther Herrmann. 2,898,055. Reversing mechanism for magnetic sound recorders. 32: 1091—1960
Gentul, Jack. 2,938,419. Binaural audio wave pickup for musical instruments. 32: 1489—1960
George, Thomas J. 2,879,388. Electronic musical instrument. 32: 908—1960
—— 2,905,905. Electric musical instrument. 32: 1488—1960
Gernert, Lawrence H. and Franklin M. Raddin. 2,880,280. Multiple magnetic transducing head with mounting and adjustment means. 32: 305—1960
Getz, Anthony J. 2,900,862. Pedal extensions for organs. 32: 1098—1960
Gibbs, Joseph P. 2,931,994. Transducer. 32: 1378—1960
—— (see Curtis, Gerald R.). 32: 792—1960
Giel, George J. (see Pitman, Duncan). 32: 534—1960
Ginsburg, Charles P. and Shelby F. Henderson, Jr. 2,866,012. Magnetic tape recording and reproducing system. 32: 524—1960
Giskes, William. 2,915,907. Phonograph turntable. 32: 783—1960
Glassey, Courtney Q. 2,835,335. Loudspeaker housing using an open side as a horn mouth. 32: 297—1960
Glenn, William E. 2,910,545. Transducer. 32: 431—1960
Goch, George (see Silbermann, Herbert). 32: 1709—1960
Goethel, Thomas P. (see Cavanaugh, Richard D.). 32: 790—1960
Gold, Archie (see Aller, Paul B.). 32: 1490—1960
Goldhammer, Otto. 2,885,921. Keyboard for keyboard instruments. 32: 1095—1960
Goldmark, Peter C. 2,872,515. Synthetic reverberation system. 32: 524—1960
Goldstein, Eugene E. 2,870,857. Translucent acoustical correction ceiling construction. 32: 523—1960
Goloff, Alexander. 2,905,022. Vibration damper. 32: 791—1960
Goodman, Clark. 2,943,694. Method and apparatus for exploring boreholes. 32: 1717—1960

Gordon, Reuben H. (see Brown, Ivan H.). 32: 910—1960
Gordon, Thurlow M., Jr., and Howard L. Taylor, Jr. 2,906,827. System for recording sound magnetically. 32: 1093—1960
—— **and Howard L. Taylor, Jr.** 2,923,781. System for continuously recording sound on film photographically. 32: 784—1960
Görike, Rudolf. 2,848,561. Dynamic microphone. 32: 1090—1960
—— 2,865,464. Unidirectional dynamic microphone. 32: 1089—1960
Gosselin, Raymond A. (see Wingard, William F.). 32: 788—1960
Gosswiller, Earl W. 2,946,995. Sound signal device. 32: 1708—1960
Grace, Billy Joe. 2,910,689. Transistor horn. 32: 431—1960
Gratian, Joseph W. 2,881,263. Reproducing means for magnetic recording apparatus. 32: 525—1960
—— **and William B. Latchford.** 2,889,414. Combination recording heads. 32: 526—1960
Gravley, Wilton (see Summers, Gerald C.). 32: 789—1960
Green, Arthur Robert. 2,924,139. System and mechanism for making ordinary pianos respond to player piano rolls. 32: 1712—1960
Grindle, Eugene L. and James L. Savage. 2,900,817. Vibrating reed vibrometer. 32: 439—1960
Gross, Edward H. 2,855,039. Sound-absorbent structure. 32: 430—1960
Gruber, Joseph J. and Joseph J. De Falco. 2,897,551. Sound absorbing structure. 32: 1182—1960
—— **and Joseph J. De Falco.** 2,924,857. Sound absorbing structure. 32: 1373—1960
Guier, William and Roy H. Deitrickson. 2,905,200. Pulsation damper. 32: 787—1960
Gulton, Leslie K. 2,892,955. Ceramic transducers. 32: 434—1960
—— 2,893,707. Method of ultrasonic treatment and device. 32: 167—1960
Gunther, Roland E. 2,864,898. Transducer devices. 32: 300—1960
Günther, Walter. 2,911,874. Means for adjusting the touch of keys in pianos. 32: 1487—1960
Guttwein, Gunter K. 2,892,900. Synchronizing apparatus. 32: 636—1960

Hackley, Reginald A. and Edward S. Rogers. 2,925,581. Scanning systems. 32: 1099—1960
Haerther, William W., Jr., and Mauritz F. Noren. 2,873,813. Acoustic diaphragm and method of construction. 32: 301—1960
Hahn, Richard. 2,848,059. Sound baffles. 32: 298—1960
Halftermeyer, René. 2,886,330. Magnetic duplicate sound record. 32: 525—1960
Hallmann, Johan Paul Heinrich. 2,912,516. Tape guiding device. 32: 1710—1960
Hamilton, Ray V. 2,839,151. Acoustical filters for the exhaust of internal combustion engines. 32: 308—1960
Hammond, Laurens. 2,845,831. Keyboard and switching mechanism for electrical musical instruments. 32: 530—1960
Hanert, John M. 2,905,040. Method and apparatus for producing chorus effects in music. 32: 1487—1960
—— 2,916,957. Reiterating percussive effect apparatus for electronic musical instruments. 32: 1489—1960
—— 2,916,958. Percussive effect for electrical musical instruments. 32: 1489—1960
—— 2,922,329. Electrical musical instrument with multiple utilization of tone signal sources. 32: 1713—1960
—— 2,943,527. Adjustable tune producing instrumentality. 32: 1712—1960
Hansen, Kai H. (see Bertsch, Joseph F.). 32: 1382—1960
Hanyss, Eugene A. 2,885,887. Ultrasonic testing. 32: 166—1960
Hardy, Maurice E. 2,918,289. Retractable phonograph spindle. 32: 783—1960
Hargrave, Willard B. 2,920,139. Balanced binaural audio trainer. 32: 636—1960
Harris, Francis S. 2,835,744. Microphone. 32: 1090—1960
Harris, Jack B. 2,857,478. Co-planar loudspeaker. 32: 299—1960
Harris, Robert V. 2,875,354. Piezoelectric transducer. 32: 434—1960
Harris, Wilbur T. 2,903,673. Acoustical impedance-matching transducer. 32: 440—1960
—— 2,922,483. Acoustic or mechanical impedance. 32: 911—1960
Hartenstein, Raymond G. 2,917,264. Vibration and shock isolation mount. 32: 1382—1960
Hartman, Herbert L. 2,925,737. Plural-speed phonograph turntable drive mechanisms. 32: 1709—1960
Hartsfield, William L. 2,848,058. Compressional-wave lens. 32: 298—1960
Hassan, Joseph A. 2,860,721. Sound reproducing device. 32: 300—1960
Hauser, Robert F. 2,946,254. Blackboard for instruction in music. 32: 1712—1960
Haushalter, Fred L. 2,882,747. Vibration damper with cooling element. 32: 167—1960
Hausmann, George F. 2,882,992. Low drag exhaust silencer. 32: 908—1960
Havstad, James W. 2,900,451. Magnetic transducing apparatus. 32: 1091—1960
Hawkins, James E. 2,910,065. Radioacoustic ranging system. 32: 534—1960
—— 2,946,393. Method of seismic prospecting. 32: 1717—1960
Haynes, Nathan M. 2,872,531. Sound recorders. 32: 163—1960
Heimberger, William W. (see Settles, James C.). 32: 787—1960
Heine, Henry William. 2,877,532. Manufacture of acoustic fireproof tiles. 32: 523—1960
Helpap, Ferdinand. 2,897,270. Circuit arrangement for use in magnetic recorders. 32: 524—1960
Henderson, John D. 2,939,923. Hearing aid plastic ear pieces. 32: 1374—1960
Henderson, Shelby F., Jr. (see Ginsburg, Charles P.). 32: 524—1960
Hermann, Robert A. 2,892,667. Range and bearing sonar recording device. 32: 169—1960
Herold, Edward W. 2,873,637. Touch control for polyphonic musical instruments. 32: 907—1960
Herrmann, Edward M. (see Schlachter, Karl E.). 32: 531—1960
Herrmann, Frank A. 2,938,083. Transistor amplifier hearing aid unit with receiver vibration feedback suppression. 32: 1374—1960
Herrmann, Gunther (see Genning, Ernst). 32: 1091—1960
Hesse, Arno and Peter Walzak. 2,838,129. Muffler assembly. 32: 435—1960
Hetzel, Max. 2,888,582. Tuning fork oscillator. 32: 529—1960
Heuser, Paul Fred (see Chandler, Wesley M.). 32: 165—1960
Hewitt, George. 2,924,043. Resonator. 32: 910—1960
Hildebrandt, Alexander B. 2,898,575. Geophone assembly. 32: 781—1960
Hlinsky, Emil J. 2,880,599. Vibration damping gear. 32: 167—1960
Hoekstra, Cyrus E. 2,910,263. Shock and vibration isolation mount. 32: 1379—1960

Hoffar, Henry Stonestreet. 2,877,860. Apertured pliable resilient damper wall silencer. **32**: 532—1960
Hoffman, Carl S. 2,869,670. Intake silencer. **32**: 437—1960
Hogan, John W. 2,891,115. Magnetic transducer. **32**: 527—1960
Holcroft, Donald E. 2,900,024. Silencer. **32**: 437—1960
Holland, Jesse G. 2,926,740. Acoustic control device for loudspeakers. **32**: 905, 1088—1960
Hollingsworth, Maurice H. 2,909,619. Improved hearing aid. **32**: 296—1960
Hollister, H. W. 24,658. Stop beads in suspended ceilings. **32**: 1182—1960
Holman, Howard E. 2,881,650. Electronic piano amplifier. **32**: 1096—1960
Holman, Wesley A. 2,913,535. Magnetic transducer. **32**: 1711—1960
Holmes, Thomas H. 2,941,615. Device for loading tandem charge arrays. **32**: 1718—1960
Hoodwin, Louis S. 2,921,135. Electroacoustical device. **32**: 636—1960
Horn, Ladd L. (see LaPorte, Gerald E.). **32**: 1385—1960
Hothem, Forrest E. 2,943,157. Combination of microphone cage and head-support therefor. **32**: 1377—1960
Hougen, Harold C. (see Kean, Clare H.). **32**: 781—1960
Houston, Reese T. (see Scott, James G.). **32**: 1184, 1375—1960
Hoyer, Arnold. 2,905,042. Stringed musical instrument bridge. **32**: 307—1960
Hoyle, Robert L. 2,912,062. Exhaust snubber or the like. **32**: 1715—1960
Hubbard, Charles L. (see Charske, Charles J.). **32**: 1376—1960
Hughett, Maurice G. 2,842,222. Acoustical test cell structures. **32**: 436—1960
Hulswit, William H., Jr., Daniel R. Elliott, and Eugene H. Culp. 2,920,481. Apparatus for determining the tendency of pneumatic tires to produce thump. **32**: 1714—1960
Hummert, Fred. 2,908,343. Hearing aid ear-piece gasket. **32**: 524—1960
Humphrey, John H. and Richard H. Dorf. 2,888,849. Electronic music instruments. **32**: 1096—1960
Hunter, Joseph E., Jr., and Norman W. Schubring. 2,848,891. Apparatus for ultrasonic testing. **32**: 438—1960.
Hunter, Robert C. 2,866,515. Cone for loudspeaker assembly. **32**: 301—1960
Hurd, George E., Jr. and Henry Joseph Jewett. 2,929,586. Propeller vibration suppressor. **32**: 1384—1960

Irby, William L. 2,876,295. Lateral magnetic recorder. **32**: 304—1960

Jack, Alois J. 2,892,892. Vocoder absorption modulation system. **32**: 306—1960
Jacke, Stanley E., Lowell C. Newsome, and Thomas J. Kearney. 2,900,038. Ultrasonic cleaning apparatus. **32**: 438—1960
Jacobs, Charles T. 2,912,520. Dictating machine. **32**: 433—1960
Jacobson, Arthur L. and Stanley E. Sorenson. 2,882,558. Suspension of ceiling tile. **32**: 634—1960
Jaeger, Robert Pierson (see Fairbanks, Grant). **32**: 309—1960
Jandris, Albert C. and Joseph A. Jandris. 2,819,046. Vibration absorbing apparatus. **32**: 439—1960
Jandris, Joseph A. (see Jandris, Albert C.). **32**: 439—1960
Jansen, Richard E. and Robert E. Ulrich. 2,946,860. Headset. **32**: 1711—1960
Janszen, Arthur A. 2,896,025. Electrostatic loudspeaker. **32**: 161—1960
Jarrett, William J. 2,868,078. Noise reducer for gun. **32**: 436—1960
Jenkins, Jules E. 2,917,918. Vibration measuring and recording apparatus. **32**: 1385—1960
Jensen, Del. W. (see McRee, William R.). **32**: 1716—1960
Jewett, Henry Joseph (see Hurd, George E., Jr.). **32**: 1384—1960
Jilski, Theodor Wilhelm Ernst and Otto Oskar Siegfried Denkhaus. 2,838,127. Device for the transmission of sound from room having a high noise level. **32**: 302—1960
Johnson, Albert Ernest and Theodore David Conway. 2,892,040. Electrical recording and reproducing apparatus. **32**: 527—1960
Johnson, Charles L. 2,928,209. Duck call. **32**: 1183—1960
Johnson, Howard R. 2,903,084. Speaker assembly. **32**: 162—1960
Johnson, Lenard H. 2,886,757. Tape recorder drive. **32**: 526—1960
—— 2,895,014. Magnetic recording head-moving mechanism. **32**: 637—1960
Johnston, Clarence A. 2,913,067. Ceiling mounting for speaker. **32**: 432—1960
Johnston, Henry E. (see Reed, Wilbur B.). **32**: 300—1960
Johnston, Spencer G. (see Farrand, William A.). **32**: 1091—1960
Jolfre, René C. 2,841,234. Diaphragm type acoustic screen. **32**: 430—1960
Jolly, Stuart T. 2,872,530. Magnetic record transducer. **32**: 163—1960
Jones, Edward M. 2,924,138. Electronic synchronizing system for producing pitch disks and the like. **32**: 1714—1960
Justus, Edgar J. (see Dahl, Carl B.). **32**: 165—1960

Kagdis, William A. 2,926,221. Loudspeaker construction. **32**: 905—1960
Kaiser, W. L. 2,814,052. Vibration eliminating support for seats and beds. **32**: 438—1960
Kalfaian, Meguer V. 2,872,517. Fundamental frequency selector from speech sound waves (for all voices). **32**: 787—1960
Kalmus, Henry Paul. 2,907,835. Capacitive transducer. **32**: 435—1960
Kaprelian, Edward K. (see Schwartz, Morris). **32**: 906—1960
Karal, Frank C., Jr. (see Ely, John O.). **32**: 780—1960
Karlson, John E. 2,896,736. Acoustic system. **32**: 161—1960
Karsted, Jessie W. and Irvin F. Sumner. 2,877,862. Sound producer. **32**: 301—1960
Kean, Clare H., Frank N. Tullos, and Harold C. Hougen. 2,894,597. Acoustic well logging apparatus. **32**: 781—1960
Kearney, Thomas J. (see Jacke, Stanley E.). **32**: 438—1960
Keiser, Morris. 2,932,002. Acoustic position finder. **32**: 1375—1960
Kelley, Walter A. and Robert D. Mohler. 2,910,688. Electronic horn. **32**: 431—1960
Kemp, William George. 2,841,255. Acoustical system. **32**: 429—1960
Kennard, Dwight C., Jr. 2,906,117. Vibrometer. **32**: 792—1960
Kerley, James J., Jr., and Robert M. Sando. 2,913,215. Shock and vibration isolator. **32**: 1381—1960
Kiekhaefer, Elmer C. 2,909,031. Vibration isolation of power head. **32**: 791—1960
—— 2,911,936. Resilient mounting for an outboard motor. **32**: 1379—1960
—— 2,911,937. Engine cowl structure for outboard motors. **32**: 1380—1960
—— 2,916,007. Resilient mounting for an outboard motor. **32**: 1381—1960

Kiernan, Earl F. 2,892,993. Ultrasonic probe. 32: 166—1960
Killian, Claud R. 2,882,991. Jet engine silencer. 32: 533—1960
Kilpatrick, Lester L. (see Farrand, William A.). 32: 1091—1960
Kimball, Leigh L. (see Worrell, Edsel A.). 32: 1188—1960
Kirkland, Robert E. 2,908,888. Acoustic logs. 32: 534—1960
Kirkpatrick, Claude L. (see Carruthers, Walter W.). 32: 793—1960
Kirkpatrick, Thomas P. 2,892,507. Flue type acoustic hood. 32: 1186—1960
Kishibay, Charles O. 2,883,955. Noise vibration damping for sewing machines. 32: 160—1960
Klann, Paul A. 2,909,094. Electrically controlled pneumatic valve for electric organs. 32: 1486—1960
Klein, Dietrich J. 2,868,471. Tape recorder. 32: 162—1960
Kleis, Derk and Hermanus Johannes de Witt. 2,882,347. Magnetic erasing head. 32: 305—1960
—— (see De Niet, Edmond). 32: 1711—1960
Kliewer, Edward A., Sr. 2,838,128. Engine exhaust muffler. 32: 308—1960
Klinkhamer, Jacob Fredrik, Cornelis Martinus van der Burgt, and Johannes Meyer Cluwen. 2,901,555. Electromechanical amplifier. 32: 780—1960
Klint, Robert V. 2,916,258. Vibration damping. 32: 1381—1960
Knauert, William F. 2,927,977. Acoustic signal transducers. 32: 1088—1960
—— 2,927,978. Acoustic signal transducers. 32: 1088—1960
Knecht, Emil. 2,926,921. Tone arm mechanism. 32: 1709—1960
Knowles, Hugh S. and Joseph Mullen. 2,912,523. Electroacoustic transducer. 32: 639—1960
—— **and William A. Plice.** 2,912,522. Electromechanical transducing device. 32: 638—1960
Koch, Winfield R. 2,925,541. Voice coil structure. 32: 905—1960
Kodaras, Michael J. 2,922,202. Sound-proof door. 32: 1374—1960
Konins, Julius A., Kenneth Robinson, and Henry C. Pollak. 2,938,962. Azimuth seeking reproducing head. 32: 1376—1960
Kopke, Ernst W. 2,849,077. Noise suppressing screen. 32: 430—1960
Kornei, Otto. 2,905,770. Flux responsive magnetic reproducer head. 32: 1093—1960
Krieger, Charles J. 2,907,008. Multichannel variable magnetic delay device. 32: 534—1960
Kroeger, Edward P. 2,888,232. Vibration isolation mounting. 32: 169—1960
Kruger, Michael Henry. 2,854,565. Luminous sound-absorbing ceiling. 32: 430—1960
Kucher, Andrew A. 2,879,341. Tape recorder and player. 32: 305—1960
Kuhl, Walter K. 2,923,369. Acoustic reverberation arrangements. 32: 1373—1960
Kuipers, Jack B. 2,829,521. Gyroscopic structure. 32: 639—1960
Kunz, Jacob T. 2,822,716. Mounting for vibrator of electrical musical instrument. 32: 785—1960
—— 2,873,640. Striking mechanism for music instrument. 32: 907—1960
—— 2,898,795. Free-free type tone generating bar. 32: 1097—1960
Kuras, Manfred H. 2,896,739. Motor vehicle muffler. 32: 1098—1960
Kurtze, Gunther and Konrad Tamm. 2,856,022. Directional acoustic signal transducer. 32: 299—1960
Küsters, Willy (see Schoeps, Karl). 32: 1090—1960
La Bossier, Ralph H. 2,914,982. Tuning device for a guitar type instrument. 32: 530—1960
LaPorte, Gerald E. and Ladd L. Horn. 2,935,279. Resilient mounting for hermetic refrigeration compressors. 32: 1385—1960
Latchford, William B. (see Gratian, Joseph W.). 32: 526—1960
Laue, Eric G. 2,909,059. Means for detecting resonance vibration. 32: 792—1960
Lazarus, Max A. 2,896,648. Ultrasonic cleaner and degreaser. 32: 438—1960
Lee, James Alexander (see da Costa, Harry). 32: 303—1960
Leininger, Sylvan V. 2,894,599. Oil separator and muffler. 32: 909—1960
Lekas, John P. 2,873,073. Tape recorder and transcriber drive system. 32: 163—1960
—— (see Farrand, William A.). 32: 1091—1960
Lemmerman, Carl W. 2,915,135. Acoustical panel. 32: 1183—1960
Lemmon, Walter S. (see Mac Adam, Mark L.). 32: 1375—1960
Lemoine, Yves. 2,897,710. Apparatus for making circular sound tracks. 32: 1097—1960
Leonard, Verna M. 2,938,421. Indicator and teaching device for keyboard instruments. 32: 1486—1960
Leslie, Donald James. Re. 24,566. Acoustic apparatus. 32: 296—1960
—— 2,869,667. Rotatable tremulant sound producer. 32: 786—1960
—— 2,869,669. Acoustic apparatus. 32: 786—1960
—— 2,887,000. Multiple channel speaker system. 32: 1088—1960
—— 2,921,494. Electrostatic musical tone generator system. 32: 1713—1960
Lesser, Murray L. 2,907,009. Magnetic head commutator. 32: 1093—1960
Lesti, Arnold. 2,890,275. Magnetic recording using acoustic delay line. 32: 526—1960
Levy, Sidney E. 2,832,845. Sound translating device. 32: 431—1960
—— 2,857,012. Universal support system for reflex-type loudspeaker. 32: 299—1960
—— 2,858,377. Driver unit for loudspeakers. 32: 299—1960
—— (see Cohen, Abraham B.). 32: 298 (2 patents)—1960
Lewis, Herbert O. (see Bann, Michael S.). 32: 431—1960
Lindenberg, Theodore. 2,934,611. Electrostatic speaker. 32: 1375—1960
Lindman, Morris W. 2,942,681. Noise reduction device for submarines. 32: 1491—1960
Lindridge, Charles D. 2,866,849. Apparatus for improving sounds of music and speech. 32: 524—1960
—— 2,888,517. System and apparatus for reproducing and re-recording music. 32: 162—1960
Loofbourrow, Alan G. 2,901,290. Wheel mounted vibration damper. 32: 789—1960
Loofbourrow, Robert J. 2,931,455. Acoustic logging of wells. 32: 1184—1960
—— 2,944,621. Testing device for acoustical logging system. 32: 1717—1960
Lopez-Henriquez, Miguel. 2,858,899. High fidelity speaker enclosure system. 32: 300—1960
Lowe, Russell T. and Richard D. Cavanaugh. 2,912,212. Resilient support. 32: 1380—1960
Lowry, Edgar A. 2,912,514. Magnetic recorder mechanism. 32: 1185—1960
Lubow, Raymond. 2,837,597. Audio reproduction apparatus. 32: 296—1960

Lucchesi, Luciano. 2,917,963. Mechanically operated violin bow and the like. 32: 785—1960
Lufcy, Carroll W. 2,912,515. Magnetic transducer head for tape recording, playback, and erasing. 32: 1185—1960
Luxford, Robert R. 2,920,849. Resilient base for machines. 32: 1383—1960
Lydard, Martin L. 2,866,233. Acoustical ceiling structure. 32: 430—1960
Lyon, William H. 2,892,901. Long-time recorder with fixed transducer heads and yielded tape-pressure shoe. 32: 636—1960
—— 2,897,287. Long-time continuous magnetic recording with delayed monitoring. 32: 528—1960
—— 2,897,290. Automatic tracking device for transverse sound track tape recorders. 32: 637—1960
Lyons, Douglas Arthur. 2,904,124. Loudspeaker systems. 32: 162—1960

Maas, Louis A. 2,915,872. Periodic chime control mechanism. 32: 1486—1960
Mac Adam, Mark L., Walter S. Lemmon, and Stephen S. Stefanowicz. 2,935,565. Sonic signalling and ranging apparatus for marine use. 32: 1375—1960
Maccaferri, Mario. 2,923,372. Acoustic tile. 32: 1372—1960
—— 2,931,214. Acoustical tile. 32: 1373—1960
—— 2,935,152. Acoustical units and installed assemblies thereof. 32: 1373—1960
Machalek, Ferdinand T. 2,905,041. Piano action. 32: 907—1960
MacPhail, Malcolm R. (see Feagin, Frank J.). 32: 1184—1960
Madeley, Paul E. (see Erath, Louis W.). 32: 782—1960
Malaquin, André. 2,916,280. Torsional vibration damper. 32: 1382—1960
Mancini, Vitaliano. 2,902,896. Valve control for a musical instrument. 32: 1489—1960
Manley, Fred A. and Paul W. Ankerman. 2,863,520. Loudspeaker cone rim treatment. 32: 300—1960
—— **and Frank H. Slaymaker.** 2,836,664. Loudspeaker. 32: 297—1960
Manley, Jack M. and Paul A. Reiling. 2,892,891. Voice-operated gain adjusting device. 32: 306—1960
Marchand, Gaston A. 2,847,520. Damped microphone. 32: 1090—1960
Mariano, Connie. 2,915,933. Accordion reed construction. 32: 639—1960
Markowitz, Jerome. 2,888,850. Combination electronic organ and transient tone producing device. 32: 1096—1960
Markowski, Edwin P. 2,828,934. Vibration isolator. 32: 639—1960
—— 2,917,265. Vibration isolator. 32: 1382—1960
Marshall, James W. and Frederick A. Walter. 2,914,844. Apparatus for assembling a vibration damper. 32: 1381—1960
Marshall, Jule F. 2,907,405. Filter-silencer. 32: 1715—1960
Martel, Antonin. 2,899,507. Loading means for magnetic films insuring the endless winding up and unwinding of bands. 32: 638—1960
Martin, Daniel W. 2,879,683. Monaural-binaural transmission of sound for producing a Haas effect. 32: 786—1960
Martin, Harold F. 2,921,144. Transducer support for sound recording or reproducing system. 32: 638—1960
Marty, René. 2,909,616. Magnetic talking machine. 32: 1185—1960
Maruo, Hisao. 2,908,344. Muffler. 32: 1715—1960
Mason, Russell I. 2,938,483. Acoustic decoy. 32: 1492—1960
Mason, Warren P. 2,883,486. Piezoelectric switching device. 32: 164—1960
—— 2,939,106. High frequency electromechanical transducer. 32: 1718—1960
Matey, George J. and William A. Dehler. 2,831,378. Sound-insulated drop hammer head. 32: 639—1960
Mathewson, Arthur A., Jr., and Charles S. Penfield. 2,903,240—Sonic earth boring drill. 32: 782—1960
Matsuoka, Earl. 2,832,844. Speaker driver. 32: 29[illegible]—1960
Matsuura, Harumi. 2,947,822. Snap coupling between eyeglass temple plate and hearing aid housing. 32: 1707—1960
Matthew, Jack L. and Albert Punturi. 2,897,711. Tremolo device for stringed musical instruments. 32: 165—1960
Maulshagen, Henry C. (see Crandell, Robert B.). 32: 310—1960
Maxey, Alexander R. 2,912,518. Magnetic tape apparatus. 32: 1710—1960
McBride, John W. 2,906,158. Stringed musical instrument of the percussion type. 32: 307—1960
McCluskey, Donald S. (see Reen, Gerald K.). 32: 439—1960
McCreary, Harold J. 2,896,044. Magnetostrictive relay. 32: 164—1960
McCutchen, Samuel P., Jr., and Jack E. Eskilson. 2,888,522. Magnetic transducer head unit. 32: 526—1960
McDonald, James. 2,835,334. Speaker unit. 32: 297—1960
McDonald, William. 2,911,055. Engine exhaust silencer. 32: 1715—1960
McFaul, Gordon P. (see Rohn, William C.). 32: 1088—1960
McIntyre, Thomas F., Jr. 2,887,001. Clarinet key arrangement. 32: 164—1960
McMichael, John D. 2,869,679. Cleaner-silencer assembly. 32: 437—1960
—— 2,886,130. Cleaner-silencer assembly. 32: 909—1960
—— 2,896,742. Cleaner silencer assembly. 32: 1098—1960
—— 2,904,129. Low pass filter type cleaner silencer unit. 32: 1187—1960
—— 2,905,268. Cleaner silencer assembly. 32: 1715—1960
McMullen, Wesley W. 2,905,265. Cleaner silencer unit. 32: 1714—1960
McNally, James A. 2,883,131. Pneumatic mounting system. 32: 168—1960
McNerney, Roger J. 2,893,281. Background noise eliminator. 32: 1097—1960
McNutt, Robert D. 2,910,544. Magnetic transducer. 32: 1185—1960
McRee, William R. and Del. W. Jensen. 2,922,486. Mufflers for diesel trucks. 32: 1716—1960
Mee, Charles Denis. 2,873,319. Magnetic tape recording and reproducing system and apparatus. 32: 163—1960
Meeker, Leonard N. (see De Armond, Harry). 32: 308—1960
Melchior, Frederick C. 2,926,743. Venturi-flow muffler. 32: 1716—1960
Merchant, Charles J. 2,897,712. Educational keyboard musical instrument. 32: 1094—1960
Merrill, Bennett W. 2,903,055. Sound insulated folding door. 32: 1183—1960
Messeas, James, Jr. 2,924,661. Combined lamp and loudspeaker. 32: 905—1960
Metz, Jack L. 2,885,486. Record playing apparatus. 32: 303—1960
Meyer, Robert E. (see Tyler, John M.). 32: 436—1960
Meyerson, Norman L. (see Nobles, Daniel). 32: 435—1960
Michael, Stanley. 2,927,167. Pickup for musical instruments. 32: 1089—1960
Miessner, Benjamin F. 2,832,843. Sound reproducing device. 32: 296—1960
—— 2,919,616. Clamping and control apparatus for reed generators used in electronic musical instruments. 32: 1713—1960
Miller, Edward S. 2,922,848. Stereophonic sound system. 32: 1708—1960

Miller, Keith W. 2,896,937. Vibration isolator with variable damping. 32: 788—1960
Miller, Matha M. (see Albertine, Albert W.). 32: 523—1960
Miller, Meral O. 2,903,085. Engine exhaust muffler. 32: 1187—1960
Minervini, Tony U. 2,932,232. Accordion operating upon electrical musical instrument. 32: 1378—1960
Mitchell, Robert E. and Stanley K. Webster. 2,950,357. Electronic sound transmitting device. 32: 1707—1960
Mitchell, Robert L. 2,914,275. Typewriter pad. 32: 1381—1960
Moen, Carl J. 2,835,735. Anti-shock transducer. 32: 1088—1960
Moerke, Ned H. 2,841,236. Manifold type pulsation dampeners. 32: 308—1960
Mohler, Robert D. (see Kelley, Walter A.). 32: 431—1960
Montgomery, George Franklin. 2,913,524. Loudspeaking interoffice telephone. 32: 529—1960
Moore, Armistead M. 2,895,016. Magnetic erasing method. 32: 528—1960
Moore, Clarence C. 2,873,318. Magnetic recorder. 32: 163—1960
Moore, Howard. 2,876,859. Pulse suppressing apparatus. 32: 788—1960
Moore, Robert L. and Sheldon Lee Pastor. 2,877,958. Magnetic sound recorder-reproducer. 32: 304—1960
Morgan, Adolph R. 2,935,728. Underwater object locator. 32: 1492—1960
—— (see Zenel, Joseph A.). 32: 528—1960
Morrish, Leonard M. and Lloyd E. Muller. 2,881,852. Exhaust muffler means. 32: 532—1960
—— **and Lloyd E. Muller.** 2,899,007. Muffler. 32: 1186—1960
Mortley, Wilfred Sinden. 2,922,966. Ultrasonic delay devices. 32: 910—1960
Mueller, Charles W. 2,929,885. Semiconductor transducers. 32: 1186—1960
Mullen, Joseph (see Knowles, Hugh S.). 32: 639—1960
Müller, Friedrich Wilhelm. 2,847,326. Microphone comprising a magnet system. 32: 1090—1960
Muller, Lloyd E. 2,922,485. Muffler. 32: 1716—1960
—— (see Morrish, Leonard M.). 32: 532, 1186—1960
Mullin, Clayton D. and John F. Rose. 2,904,639. Temple construction. 32: 295—1960
Mundy, Alfred F. 2,911,617. Silica gel as underwater noise source. 32: 640—1960
Munro, David C. 2,940,215. Noise making device for velocipedes or the like. 32: 1485—1960
Munzfeld, Karl Heinz. 2,919,619. Chord player attachment for musical instruments. 32: 1712—1960
Murdock, Paul F. and Charles M. Pratt. 2,877,537. Method of constructing a piano action. 32: 907—1960
Murphy, Norman B. 2,919,883. Liquid damped vibration isolator. 32: 1383—1960
Murray, George H. and Bryan R. Boyle. 2,932,984. Torsional vibration dampers. 32: 1490—1960
Murty, Kenneth T. 2,882,993. Silencer. 32: 908—1960
Mustoe, R. M. 2,882,990. Sound-absorbing units and method of making same. 32: 635—1960
Myrgren, Bengt V. and Leif Branden. 2,913,715. Signal device for producing sound in telephone instruments. 32: 638—1960

Naman, Israel A. 2,916,101. Sound absorbing structure. 32: 1187—1960
Namenyi-Katz, Laszlo. 2,898,113. Multitrack tape recorders. 32: 1091—1960
Nedley, Alva Lloyd. 2,882,881. Choke flow intake silencer and method. 32: 533—1960
Neher, Eldon P. 2,881,995. Vibration damping shock absorbing support. 32: 167—1960
—— 2,883,132. Resilient mounting support. 32: 168—1960
—— **and Howard J. Peppercorn.** 2,903,228. Vibration isolator mounting. 32: 790—1960
Newman, Jay J. 2,890,288. Magnetic recording. 32: 527—1960
—— 2,913,537. Magnetic recording. 32: 1711—1960
Newsome, Lowell C. (see Jacke, Stanley E.). 32: 438—1960
Nigro, John. 2,904,123. Loudspeaker enclosures. 32: 162—1960
Nobles, Daniel and Norman L. Meyerson. 2,840,180. Means for reducing acoustical energy in a fluid translating system. 32: 435—1960
Noren, Mauritz F. (see Haerther, William W., Jr.). 32: 301—1960
Novak, James F. 2,900,040. Loudspeaker system. 32: 162—1960
Nowakowski, Edward. 2,886,999. Electronic carillon. 32: 1096—1960
Nye, Robert Glen. 2,898,587. Propeller noise simulator. 32: 310—1960

Oberg, Paul E. (see Rubens, Sidney M.). 32: 527—1960
O'Brien, Francis L. 2,925,006. Musical instruments. 32: 1713—1960
Ochiai, Shigeru. 2,932,235. Synchronized picture film and sound record apparatus. 32: 1376—1960
Oliveti, Renato Alessandro. 2,874,228. Apparatus for recording-repeating radio messages and signals, also droppable from aircraft and vessels. 32: 164—1960
Olson, Harry F. 2,854,511. Directional microphone. 32: 302—1960
—— **and Herbert Belar.** 2,855,816. Music synthesizer. 32: 531—1960
—— **and John Preston.** 2,838,607. Combination chassis and loudspeaker. 32: 297—1960
Orshansky, Elias, Jr. 2,886,142. Vibration damping apparatus. 32: 168—1960
Osborne, Fred H. 2,911,873. Organ pedal structure. 32: 1486—1960
—— **and Howard G. Bauer.** 2,846,916. Organ stops and key switches. 32: 530—1960
Otto, Harold L. 2,923,371. Speaker. 32: 905—1960

Pahud, Jacques Philippe. 2,888,581. Supersonic wave transducers. 32: 166—1960
Painter, Giles Warren. 2,926,881. Resilient mounting. 32: 1384—1960
Palmer, Elton M. 2,898,574. Apparatus for profile presentation of seismic information. 32: 793—1960
——, **Warren E. Wickerham, and Ralph D. Wyckoff.** 2,928,070. Amplitude record conversion apparatus. 32: 1183—1960
Palo, Maurice M. 2,900,536. Design of electromechanical transducer elements. 32: 435—1960
Parker, Henry W. 2,864,899. Transducer. 32: 300—1960
Passow, Edward B. 2,901,551. Eyeglass hearing aid. 32: 295—1960
Pastor, Sheldon Lee (see Moore, Robert L.). 32: 304—1960
Patla, Donald L. (see Patla, Louis J.). 32: 906—1960
Patla, Louis J. and Donald L. Patla. 2,927,657. Loudspeaker system. 32: 906—1960
Paul, Jack (see Ashe, William James). 32: 301—1960
Pearson, Harry A. 2,927,976. Acoustic signal transducers. 32: 1087—1960
Penfield, Charles S. (see Mathewson, Arthur A., Jr.). 32: 782—1960

Peppercorn, Howard J. (see Neher, Eldon P.). 32: 790—1960
Perlman, Robert Ruben. 2,839,150. Loudspeaker having means for utilizing the back wave. 32: 297—1960
Perry, Frank R. 2,895,562. Exhaust muffler for internal combustion engine. 32: 909—1960
Petermann, Lucien A. 2,926,622. Ultrasonic soldering pot. 32: 1187—1960
—— 2,928,069. Transducer. 32: 1094—1960
Peters, Melville F. 2,916,307. Vibration damper for fluid pressure seal. 32: 1382—1960
Peters, Walter V. 2,896,493. Means for facilitating transposition of musical chords. 32: 307—1960
Peterson, Gene R. (see Samsel, Richard W.). 32: 1188—1960
Peterson, Richard H. 2,906,959. Electronic organ. 32: 1488—1960
—— 2,924,137. Electronic musical instrument. 32: 1713—1960
—— 2,924,784. Electronic musical instrument. 32: 1714—1960
Pfost, Robert Fred. 2,912,517. Magnetic tape apparatus. 32: 1710—1960
Philipps, Louis E. 2,896,021. Intercommunication system. 32: 164—1960
Picozzi, Vincent J., Gilbert D. Spooner, and Robert L. Wall. 2,886,721. Acoustically treated motor. 32: 165—1960
Pier, Jerome R. 2,875,788. Pulsation dampener device. 32: 787—1960
Pitman, Duncan, David F. Rutland, and George J. Giel. 2,907,012. Sofar alarm. 32: 534—1960
Plant, George R. G. 2,915,589. Frequency indicators. 32: 639—1960
Plice, William A. (see Knowles, Hugh S.). 32: 638—1960
Podolak, Edward and Murray Strasberg. 2,918,651. Calibrator for underwater hydrophones. 32: 793—1960
Pohlman, Reimar. 2,896,922. Ultrasonic means for changing the homogeneity of mixtures. 32: 437—1960
Pollak, Henry C. (see Konins, Julius A.). 32: 1376—1960
Polley, Eugene J. 2,920,490. Phonograph drive. 32: 784—1960
Poole, Forrest R. (see Wadsworth, William B.). 32: 1707—1960
Potter, Ralph K. 2,894,798. Magnetic printer. 32: 637—1960
Pratt, Charles M. (see Murdock, Paul F.). 32: 907—1960
Prescott, Herbert L. (see Daly, Thomas A.). 32: 789—1960
Preston, John (see Olson, Harry F.). 32: 297—1960
Price, Manley R. 2,924,856. Perforated tile supporting system. 32: 1372—1960
Probst, Delbert C. 2,897,916. Cleaning and silencing means. 32: 1098—1960
Probus, James H. 2,895,061. Piezoelectric sandwich transducer. 32: 310—1960
Proctor, Barton A. 2,911,161. Sound recording and reproducing apparatus. 32: 433—1960
Proskauer, Richard (see Blizard, Robert B.). 32: 1718—1960
Punturi, Albert (see Matthew, Jack L.). 32: 165—1960

Radcliffe, John R. 2,909,956. Playing instruction device for pianos. 32: 1486—1960
Raddin, Franklin M. (see Gernert, Lawrence H.). 32: 305—1960
Raisbeck, Gordon. 2,908,761. Voice pitch determination. 32: 639—1960
Raze, Douglas D. 2,903,935. Capo tasto. 32: 307—1960
Reed, Donald E. (see Sweeney, John F.). 32: 1711—1960
Reed, Wilbur B. and Henry E. Johnston. 2,863,953. Transducer. 32: 300—1960
Reen, Gerald K. and Donald S. McCluskey. 2,820,159. Electromagnetic vibration exciter. 32: 439—1960
Reiling, Paul A. (see Manley, Jack M.). 32: 306—1960
Renaut, Paul Emile. 2,884,781. Apparatus for ultrasonic inspection of materials. 32: 166—1960
—— 2,893,239. Ultrasonic flaw detector device. 32: 166—1960
Renna, Adolf A. T. 2,930,274. Piano accordion wrist rest. 32: 1098—1960
Reynolds, Donald K. Re. 24,641. Magnetic record testing means. 32: 524—1960
—— 2,894,796. Magnetic recording system. 32: 637—1960
Reynolds, Ralph W. 2,915,115. Sound retardant flexible room divider. 32: 1183—1960
Reynolds, Vining T. 2,932,001. Seismic record plotter. 32: 1184—1960
Ridler, Desmond Sydney and Bernard Frank Armsby. 2,883,475. Driving arrangements. 32: 306—1960
Ringman, Henry W. 2,915,851. Duck call. 32: 636—1960
Riscol, Joseph G. 2,933,967. Electromagnetic pickup assembly for stringed instruments. 32: 1378—1960
Roberts, Bruce. 2,873,926. Magnetic tape recording equipment. 32: 304—1960
Roberts, Shepard. 2,902,545. Shear type piezoelectric device. 32: 307—1960
Robinson, Kenneth (see Konins, Julius A.). 32: 1376—1960
Roepke, Willi. 2,871,019. Device for magnetically recording and reproducing sound. 32: 163—1960
Rogers, Edward S. (see Hackley, Reginald A.). 32: 1099—1960
Rohn, William C. and Gordon P. McFaul. 2,926,741. Speaker. 32: 1088—1960
Rolla, Adriano. 2,908,773. Electroacoustic transducer. 32: 528—1960
Rose, Edgar. 2,883,130. Vibration absorber. 32: 167—1960
—— 2,890,674. Resilient outboard motor mounting. 32: 788—1960
Rose, John F. (see Mullin, Clayton D.). 32: 295—1960
Rosen, Charles A. (see Spitzer, Charles F.). 32: 432—1960
Ross, Bernard A. 2,823,882. Vibration damper. 32: 439—1960
Rubens, Sidney M., Arndt B. Bergh, and Paul E. Oberg. 2,892,041. Magnetic transducing apparatus. 32: 527—1960
Rubin, Leonard R. 2,946,152. Musical toy hoop. 32: 1712—1960
Ruschhaupt, Dolph W. 2,852,087. Sound reproducing devices. 32: 298—1960
Rust, William M., Jr. (see Feagin, Frank J.). 32: 1184—1960
Rutland, David F. (see Pitman, Duncan). 32: 534—1960

Sabine, Hale J. 2,838,806. Fireproof acoustical correction panels. 32: 429—1960
Sager, Karl E. 2,901,548. Editor for sound recording and reproducing devices. 32: 1092—1960
Saggese, Benjamin J. (see Zuerker, Siegfried J.). 32: 161—1960
Samsel, Richard W. and Gene R. Peterson. 2,928,068. Compressional wave transducer and method of making the same. 32: 1188—1960
—— (see Crandell, Robert B.). 32: 310—1960
Sando, Robert M. (see Kerley, James J., Jr.). 32: 1381—1960
Sano, Julian H. 2,892,170. Pressure transducer nonresponsive to vibrations. 32: 785—1960
Santi, Harris H. 2,847,081. Acoustical enclosure to simulate organ tones. 32: 298—1960
Sasaki, Noburo. 2,907,455. Apparatus for the recovery of fine carbonic fuel particles from slurry by ultrasonic waves. 32: 533—1960
Savage, James L. (see Grindle, Eugene L.). 32: 439—1960

Sawyer, Howard C. 2,837,169. Combined engine muffler and combustion chamber. 32: 308—1960
Saxton, Harold L. (see Steinberger, Raymond L.). 32: 1718—1960
Schilling, Robert (see Bertsch, Joseph F.). 32: 1382—1960
Schlachter, Karl E. and Edward M. Herrmann. 2,869,671. Gas turbine muffler. 32: 531—1960
Schloss, Fred. 2,830,780. Low-frequency noise and shock isolation mount. 32: 639—1960
—— 2,890,846. Low-frequency shock noise mounting. 32: 169—1960
Schneeberger, Richard F. and Harold O. Schwartz. 2,895,366. Organ structure and filter panel. 32: 1097—1960
Schnell, Charles Torbjorn. 2,914,329. Phonographs for placing the pickup arm needle in the correct initial playing position on a sound disk record to be played. 32: 782—1960
Schoengold, Herbert. 2,840,177. Loudspeaker diaphragm support. 32: 298—1960
Schoeps, Karl and Willy Küsters. 2,852,620. Adjustable condenser microphone. 32: 1090—1960
Schreiber, Ernst. 2,907,244. Electrical musical instrument. 32: 908—1960
Schubring, Norman W. (see Hunter, Joseph E., Jr.). 32: 438—1960
Schultz, Charles F. 2,911,871. Magnetic pickup device. 32: 435—1960
Schultz, Theodore J. 2,868,894. Miniature condenser microphone. 32: 1089—1960
Schumacher, Martin. 2,925,580. Echo sounding system. 32: 1099—1960
Schumann, Alec. 2,918,538. Electromechanical transducers. 32: 783—1960
Schuyler, Ralph A. 2,912,178. Magnetic sound recording machine. 32: 1710—1960
Schwartz, Harold O. (see Schneeberger, Richard F.). 32: 1097—1960
Schwartz, Morris and Edward K. Kaprelian. 2,925,753. Sound projector. 32: 906—1960
Schwartzkopf, Lewis J. (see Dreher, John J.). 32: 306—1960
Scott, George H. 2,903,937. Musical time indicator. 32: 307—1960
Scott, James G., Roland A. Freeman, and Reese T. Houston. 2,933,144. Well logging method and apparatus. 32: 1184, 1375—1960
Scott, Raymond. 2,871,745. Keyboard operated electrical musical instrument. 32: 786—1960
Sebok, Frank. 2,871,976. Air cleaner-intake silencer unit and filter element therefor. 32: 531—1960
Sebok, Joseph B. 2,896,738. Air cleaner and silencer unit. 32: 910—1960
Serrell, Robert. 2,901,549. Magnetic recording system. 32: 1092—1960
Settles, James C. 2,887,071. Vibration absorber for vehicles. 32: 168—1960
—— **and William W. Heimberger.** 2,875,731. Vibration absorbers for reciprocating tools. 32: 787—1960
Shelly, Dewitt L. 2,875,786. Pulsation dampener device. 32: 787—1960
Sherwood, Henry A. 2,916,561. Transducer. 32: 783—1960
Shields, George B. 2,909,617. Recorder-reproducer. 32: 1185—1960
Shipman, Carl N., Jr. 2,932,696. Automatic sound sequence selecting system. 32: 1377—1960
Shull, Eugene R. (see Bodeau, Arthur C.). 32: 1380—1960
Siebert, Raymond C. 2,898,115. Automatic intermix record player. 32: 303—1960
Siering, Robert L. 2,886,859. Sound absorbing wall treatment. 32: 1182—1960
Silbermann, Herbert and George Goch. 2,925,280. Record-changing apparatus for phonographs. 32: 1709—1960
Silverman, Daniel and Robert E. Fearon. 2,889,000. Seismic surveying. 32: 780—1960
Simmons, Robert W. 2,912,519. Mounting for magnetic head. 32: 433—1960
Slaymaker, Frank H. (see Manley, Fred A.). 32: 297—1960
Smith, Alonzo L. 2,946,394. Air-conduction hearing aid clamps. 32: 1707—1960
Smith, Caldwell P. Re. 24,670. Device for extracting the excitation function from speech signals. 32: 309—1960
—— 2,866,001. Automatic voice equalizer. 32: 533—1960
—— 2,903,515. Device for selective compression and automatic segmentation of a speech signal. 32: 309—1960
Smith, Roy B. 2,919,761. Mufflers. 32: 1716—1960
Soderberg, Walter E. 2,905,043. Mallet for playing percussion musical instrument. 32: 529—1960
Sorenson, Stanley E. (see Jacobson, Arthur L.). 32: 634—1960
Spaetgens, Theodore W. 2,929,592. Vibration mounting. 32: 1384—1960
Spitler, Robert E. 2,929,351. Sound control for telephone ringer. 32: 1485—1960
Spitzer, Charles F. and Charles A. Rosen. 2,911,484. Electroacoustic transducer. 32: 432—1960
Spooner, Gilbert D. (see Picozzi, Vincent J.). 32: 165—1960
Stalker, Edward A. 2,935,297. Vibration dampers for rotor blades. 32: 1490—1960
Stanley, John E. 2,882,559. Acoustical ceiling. 32: 635—1960
Stanton, Walter O. 2,917,590. Magnetic phonograph pickup. 32: 784—1960
—— 2,934,612. Electrostatic speaker. 32: 1375—1960
Starr, David A. 2,879,340. Magnetic transducing means. 32: 305—1960
Statham, Louis D. 2,909,743. Electrical strain wire transducer. 32: 1377—1960
Stefanowicz, Stephen S. (see Mac Adam, Mark L.). 32: 1375—1960
Steinberger, Raymond L. 2,906,993. Transducer for underwater sound. 32: 440—1960
——, **Robert J. Colson, and Harold L. Saxton.** 2,943,297. Multiple element electroacoustic transducer. 32: 1718—1960
Steinegger, Giovanni. 2,908,768. Device for demagnetizing the magnetized wire of a sound recording and reproducing apparatus. 32: 1094—1960
Stewart, Richard D. 2,910,980. Ear protector. 32: 524—1960
Stover, Roy L. 2,933,005. Violin bow frog. 32: 1378—1960
Strasberg, Murray (see Podolak, Edward). 32: 793—1960
Strub, Robert D. 2,903,209. Vibration dampening mount for motor. 32: 790—1960
Stryker, Norman R. 2,870,272. Loudness transmission testing system. 32: 784—1960
Summers, Gerald C. and Wilton Gravley. 2,897,478. Exploring unit for acoustical well logging. 32: 789—1960
—— (see Ely, John O.). 32: 780—1960
Sumner, Irvin F. (see Karsted, Jessie W.). 32: 301—1960
Swan, Merrill L. 2,932,547. Seismic wave recording system. 32: 1375—1960
Swanson, Carl A. 2,910,546. Loudspeaker assembly. 32: 302—1960
Swanson, Robert E. 2,884,892. Pneumatic sound producing device. 32: 161—1960
Sweeney, John F. and Donald E. Reed. 2,914,619. Magnetic tape apparatus. 32: 1711—1960
Sweeney, Morgan L., Jr. 2,814,362. Vibration damping apparatus. 32: 438—1960

Tamm, Konrad (see Kurtze, Gunther). **32**: 299—1960
Taylor, Gordon N. 2,908,766. Individual sound system for passenger vehicles. **32**: 433—1960
Taylor, Howard L., Jr. (see Gordon, Thurlow M., Jr.). **32**: 784, 1093—1960
Tegner, Carl-Axel Elof (see Brüel, Per Vilhelm). **32**: 635—1960
Templeton, Herbert W. 2,911,252. Resilient wheel. **32**: 1379—1960
Terlinde, Edward H. 2,945,408. Harmonica and microphone pickup therefor. **32**: 1714—1960
Thevenaz, Jean. 2,882,046. Machine for the magnetic recording and reproduction of sound on a perforated strip. **32**: 525—1960
Tibbetts, George C. 2,912,605. Electromechanical transducer. **32**: 785—1960
—— **and Raymond W. Tibbetts.** 2,901,644. Electromechanical device and method of making same. **32**: 435—1960
Tibbetts, Raymond W. (see Tibbetts, George C.). **32**: 435—1960
Ticchioni, Ruggero. 2,868,876. Vocal device. **32**: 787—1960
Tiger, Emil. 2,898,409. Tape transporting device for use with cartridges. **32**: 638—1960
Tinker, Townsend. 2,872,998. Acoustical silencer. **32**: 532—1960
Toht, Arthur E. 2,930,856. Hearing aid. **32**: 1088—1960
Touson, Isaac. 2,934,160. Earpiece. **32**: 1374—1960
Towle, George B. and Jack W. Davis. 2,926,744. Jet silencer. **32**: 1717—1960
Travis, Albert C., Jr. 2,893,737. Portable magnetic sound recorders. **32**: 637—1960
Trumper, Konrad. 2,904,077. Shock absorbers. **32**: 790—1960
Tullos, Frank N. (see Kean, Clare H.). **32**: 781—1960
Turner, Edwin E. 2,899,565. Method and apparatus for energy conversion. **32**: 1094—1960
Tyler, John M. and Robert E. Meyer. 2,845,775. Noise suppressors for jet engines. **32**: 436—1960
Tyskewicz, John P. (see Bourne, Roland B.). **32**: 1187—1960

Ulrich, Robert E. (see Jansen, Richard E.). **32**: 1711—1960

Vacquier, Victor (see Blizard, Robert B.). **32**: 1718—1960
Van Antwerp, Robert L. 2,918,288. Record changers for phonographs. **32**: 783—1960
van der Burgt, Cornelis Martinus (see Klinkhamer, Jacob Fredrik). **32**: 780—1960
Van Der Sluys, William. 2,925,051. Sound barrier for passenger vehicles. **32**: 1374—1960
—— (see Candlin, James E., Jr.). **32**: 1374—1960
Van Dijck, Willem Johannes Dominicus. 2,944,620. Method of recording seismograms and of preparing derived seismograms. **32**: 1717—1960
Van Osch, John H. 2,901,939. Apparatus for synchronizing sound with motion pictures. **32**: 303—1960
Viets, Charles William. 2,867,389. Sound reproducing device. **32**: 162—1960
Vilbig, Friedrich. 2,902,543. Signal transmission. **32**: 1489—1960
Vistain, James E., Jr. 2,898,117. Phonograph record player mechanism. **32**: 432—1960
Voell, Louis A. 2,907,827. Telephone device. **32**: 307—1960
Vogel, Charles B. 2,915,738. Hydrophone detector. **32**: 793—1960
Vogel, Norman A. 2,886,651. Air head. **32**: 525—1960
Volpe, Daniel J. 2,902,897. Toy piano. **32**: 1486—1960
Von Munchhausen, Heyno. 2,880,471. Sound-insulating structures. **32**: 635—1960

Wachholz, Helmut. 2,913,701. Electrodynamic transducers for vibrations transmitted through solids. **32**: 1385—1960
Wadsworth, William B. and Forrest R. Poole. 2,946,862. Ear protector and communication equipment. **32**: 1707—1960
Wahlborg, Karl John and Lars Johan Faith-Ell. 2,888,093. Sound-dampening structure for suction cleaners. **32**: 165—1960
Wakefield, George P. 2,833,199. Overhead lighting, sound absorbing, heating, and air conditioning. **32**: 429—1960
Waldman, Herbert. 2,896,945. Tape recording and reproducing apparatus. **32**: 1089—1960
Wall, Robert L. (see Picozzi, Vincent J.). **32**: 165—1960
Walter, Frederick A. (see Marshall, James W.). **32**: 1381—1960
Walzak, Peter (see Hesse, Arno). **32**: 435—1960
Warren, Henry Ray. 2,908,770. Magnetic recording-reproducing. **32**: 1184—1960
Washington, Lamar, Jr. 2,893,284. Foot treadle device. **32**: 529—1960
Watson, Robert M. 2,896,646. Machine for vibration treatment of surfaces. **32**: 438—1960
Watt, Gordon James. 2,925,217. Sound wave ray tracer. **32**: 1099—1960
Weathers, Paul. 2,866,514. Corrective loudspeaker enclosure. **32**: 301—1960
Webster, James D. 2,918,837. Bridge for stringed musical instruments having means for adjusting the spacing of the strings. **32**: 530—1960
Webster, Stanley K. (see Mitchell, Robert E.). **32**: 1707—1960
Wehmer, Bruno F. 2,899,506. Magnetic belt recorder. **32**: 638—1960
Weibel, Erich S. 2,881,257. Spectrum synthesizer. **32**: 1098—1960
Weinger, Ralph. 2,937,244. Electrical-acoustic transducer. **32**: 1491—1960
Welbourn, John T. 2,884,086. Soundabsorbing housing and structure. **32**: 635—1960
Weller, Robert A. and Horace T. Finch. 2,939,542. Instrument for measuring radiation pressure from a sound transmitter. **32**: 1379—1960
Wells, Alfred William John. 2,924,419. Antivibration mounting device. **32**: 1383—1960
Werner, Richard E. 2,887,532. Audio-frequency amplifier. **32**: 431—1960
Westmijze, Willem Klaas (see Duinker, Simon). **32**: 1093—1960
White, Gale. 2,932,357. Method and apparatus for recording seismic signals. **32**: 1184—1960
White, Stanley F. 2,866,513. Apparatus for generating sound. **32**: 300—1960
—— 2,923,783. Electrical-acoustical transducer. **32**: 905—1960
Wickersham, Warren E. (see Palmer, Elton M.). **32**: 1183—1960
Wickham, Henry G. 2,858,723. Piano plate. **32**: 529—1960
Wijchman, Jan. 2,897,288. Device for adjusting the air-gap position of magnetic heads. **32**: 528—1960
Wilcoxon, Kenneth H. 2,906,922. Towed hydrophone. **32**: 440—1960
Wildman, Benjamin H. 2,840,181. Loudspeaker cabinet. **32**: 298—1960
Williams, Philip B. 2,905,260. Loudspeaker diaphragm. **32**: 302—1960
Williams, Richard E. 2,910,299. Tone wheel manufacturing machine. **32**: 1488—1960
Williams, William H. and David A. Baldwin. 2,919,423. Submarine bottom scanner. **32**: 793—1960

Willsea, Jasper. 2,881,851. Apparatus for silencing the exhaust of internal combustion engines. **32**: 532—1960
Willson, Harry Claude. 2,864,155. Method of producing moving coil loudspeaker. **32**: 300—1960
Wingard, William F. and Raymond A. Gosselin. 2,894,711. Vibration isolator and shock mount. **32**: 788—1960
Winslow, Willis M. 2,417,850. Method and means for translating electrical impulses into mechanical force. **32**: 434—1960
—— 2,661,596. Field controlled hydraulic device. **32**: 434—1960
—— 2,661,825. High fidelity slip control. **32**: 434—1960
—— 2,663,809. Electric motor with a field responsive fluid clutch. **32**: 434—1960
Winterhalter, Alfred C. (see Bazzoni, Charles B.). **32**: 1376—1960
Wintriss, George. 2,928,208. Pneumatic sound maker assembly. **32**: 1183—1960
Wissmann, Joseph T. 2,876,294. Magnetic record control method and circuits. **32**: 304—1960
Witchey, Albert L. 2,942,071. Horn-type transducer. **32**. 1375—1960
Wolff, Heinz Siegfried (see Armstrong, John Noel). **32**: 905—1960
Wolgast, Carl L. 2,846,914. Gate circuit for electric organ. **32**: 530—1960
Wood, John F. 2,921,145. Phonograph pickup cartridge case and mechanism. **32**: 1708—1960
—— 2,928,052. Transistor power supply for oscillators. **32**: 1186—1960
Woodsum, Sidney P. (see Fuller, Harrison W.). **32**: 1711—1960
Wooten, Spencer D., Jr. 2,896,022. Intercommunication system. **32**: 164—1960
Worrel, John W. 2,918,838. Finger guide for musical instruments. **32**: 785—1960
Worrell, Edsel A. and Leigh L. Kimball. 2,927,284. Multiple path ultrasonic delay line. **32**: 1188—1960
Wright, John Evelyn (see Baker, George Thomas). **32**: 1093—1960
Wright, Lawson W. 2,875,789. Water shock absorber. **32**: 788—1960
Wurm, Stanley C. 2,896,952. Audible signal device. **32**: 431—1960
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2.2 Auditorium Design. (See also 7.6.)

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PAPERS

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PATENTS
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PATENTS
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PAPERS
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ABSTRACTS
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PATENTS
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Hearing aid ear-piece gasket. Fred Hummert. 32: 524—1960
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4.6 Loudness, Threshold Determinations

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4.7 Masking. (See also 5.5.)

PAPERS
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PAPERS
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PAPERS
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4.14 Ear Protectors, Earplugs

PAPERS
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4.15 Perception of Signals. Detection of Signals in Noise

PAPERS
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5. Applied Acoustics, Instruments and Apparatus. (See also 2.8, 4.5, 9.6, 10.3, 12.3, 12.3p, 12.3Z, 13.11, 13.11n, and 13.11t.)

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5.2 Amplifiers and Attenuators

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5.4 Analyzers and Filters, Acoustic and Electric. Oscillographs. (See also 5.15 and 12.3f.)

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5.5 Audiometers. (See also 4.4 and 4.5.)

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5.8 Loudspeakers, Horns. (See also 5.13, 5.17, and 5.18.)

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Acoustic diaphragm and method of construction. William W. Haerther, Jr., and Mauritz F. Noren. **32**: 301—1960

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Ceiling mounting for speaker. Clarence A. Johnston. 32: 432—1960
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Combined lamp and loudspeaker. James Messeas, Jr. 32: 905—1960
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Compressional-wave lens. William L. Hartsfield. 32: 298—1960
Cone for loudspeaker assembly. Robert C. Hunter. 32: 301—1960
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High fidelity speaker enclosure system. Miguel Lopez-Henriquez. 32: 300—1960
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Speaker. William C. Rohn and Gordon P. McFaul. 32: 1088—1960
Speaker assembly. Howard R. Johnson. 32: 162—1960
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Speaker driver. Earl Matsuoka. 32: 296—1960
Speaker unit. James McDonald. 32: 297—1960
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Transducer. Wilbur B. Reed and Henry E. Johnston. 32: 300—1960
Transducer devices. Roland E. Gunther. 32: 300—1960
Transducers. Lloyd J. Bobb. 32: 301—1960
Transmitter with vibratile air coupling. George A. Coates. 32: 298—1960
Tubular speaker housing. William James Ashe and Jack Paul. 32: 301—1960
Universal support system for reflex-type loudspeaker. Sidney E. Levy. 32: 299—1960
Voice coil connection for loudspeakers. Gordon S. Carbonneau. 32: 302—1960
Voice coil structure. Winfield R. Koch. 32: 905—1960

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5.9 Microphones. Microphone Calibration Equipment and Techniques. (See also 5.18, 12.3p, and 13.11t.)

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Accurate coupler pressure calibration of condenser microphones at middle frequencies. T. F. W. Embleton and I. R. Dagg. 32: 320—1960
Angular deviation in directional receiver correlation. Melvin J. Jacobson and Robert J. Talham. 32: 810—1960
Calibration for carrier operated microphones and other reversible transducers. M. D. Burkhard, E. L. R. Corliss, W. Koidan, and F. Biagi. 32: 501—1960
Digital array phasing. Victor C. Anderson. 32: 867—1960
High-frequency calibration of an ADP crystal microphone. P. A. Macpherson and D. B. Thrasher. 32: 1061—1960
Microphone diaphragm null method for sound pressure measurement. Walter Koidan. 32: 505—1960

Thermoelectric microphone for modulated ultrasonic waves. Rudolf A. Hanel. 32: 1436—1960
Vibration sensitivity of condenser microphones. E. Rule, F. J. Suellentrop, and T. A. Perls. 32: 821—1960

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Personal microphones. H. F. Olson, J. Preston, and J. C. Bleazey. 32: 1521—1960
Some notes on the measurement of microphone wind noise and on the use of wind screens. N. Doelling. 32: 1521—1960
Speech detection in noise. Paul S. Veneklasen and Jerry P. Christoff. 32: 1502—1960
Vibration sensitivity of condenser microphones. Eric Rule, Fred J. Suellentrop, and Thomas A. Perls. 32: 923—1960

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Adjustable condenser microphone. Karl Schoeps and Willy Küsters. 32: 1090—1960
Anti-shock transducer. Carl J. Moen. 32: 1088—1960
Damped microphone. Gaston A. Marchand. 32: 1090—1960
Device for the transmission of sound from room having a high noise level. Theodor Wilhelm Ernst Jilski and Otto Oskar Siegfried Denkhaus. 32: 302—1960
Directional microphone. Harry F. Olson. 32: 302—1960
Dynamic microphone. Rudolf Görike. 32: 1090—1960
Electroacoustical transducer. Robert Adler. 32: 432—1960
Electroacoustic transducer. Charles F. Spitzer and Charles A. Rosen. 32: 432—1960
Microphone. Maurice Bonnaffous. 32: 1089—1960
Microphone. Francis S. Harris. 32: 1090—1960
Microphone comprising a magnet system. Friedrich Wilhelm Müller. 32: 1090—1960
Microphone pickup for pianos. Raymon C. Babicky. 32: 1089—1960
Microphone support. Maurice Bonnaffous. 32: 1089—1960
Miniature condenser microphone. Theodore J. Schultz. 32: 1089—1960
Pickup for musical instruments. Stanley Michael. 32: 1089—1960
Sound-shielding housing for a microphone. Alfred L. Di Mattia. 32: 1090—1960
Unidirectional dynamic microphone. Rudolf Görike. 32: 1089—1960

5.10 Navigational Instruments Using Air Sound. Altitude Measuring Instruments. Sound Ranging (for Underwater Ranging see 13.11n)

PATENTS

Acoustic logging of wells. Robert J. Loofbourrow. 32: 1184—1960
Acoustic position finder. Morris Keiser. 32: 1375—1960
Acoustic well logging apparatus. Clare H. Kean, Frank N. Tullos, and Harold C. Hougen. 32: 781—1960
Amplitude record conversion apparatus. Elton M. Palmer, Warren E. Wickerham, and Ralph D. Wyckoff. 32: 1183—1960
Azimuth seeking reproducing head. Julius A. Konins, Kenneth Robinson, and Henry C. Pollak. 32: 1376—1960
Device for loading tandem charge arrays. Thomas H. Holmes. 32: 1718—1960
Geophone assembly. Alexander B. Hildebrandt. 32: 781—1960
Interpretation of geophysical data. Frank J. Feagin, Malcolm R. MacPhail, and William M. Rust, Jr. 32: 1184—1960
Measurement of seismic travel time. Robert A. Broding. 32: 782—1960
Method and apparatus for analysis of seismic records. Charles B. Bazzoni, Lacoste G. Ellis, and Alfred C. Winterhalter. 32: 1376—1960
Method and apparatus for compositing seismic exploration results. Louis W. Erath and Paul E. Madeley. 32: 782—1960
Method and apparatus for exploring boreholes. Clark Goodman. 32: 1717—1960
Method and apparatus for recording seismic signals. Gale White. 32: 1184—1960
Method of determining seismic reflecting subsurfaces. Tobias Flatow and Charles H. Carlisle. 32: 781—1960
Method of determining the dip of geologic formations in the vicinity of a borehole. Charles H. Carlisle and Tobias Flatow. 32: 781—1960
Method of recording seismograms and of preparing derived seismograms. Willem Johannes Dominicus Van Dijck. 32: 1717—1960
Method of seismic prospecting. James E. Hawkins. 32: 1717—1960
Multiple transducer array. Clarence S. Clay. 32: 782—1960
Seismic record plotter. Vining T. Reynolds. 32: 1184—1960
Seismic surveying. Daniel Silverman and Robert E. Fearon. 32: 780—1960
Seismic velocity well logging apparatus. Charles J. Charske and Charles L. Hubbard. 32: 1376—1960
Seismic wave recording system. Merrill L. Swan. 32: 1375—1960
Seismographic exploration. Lacoste G. Ellis. 32: 781—1960
Seismometer. Thomas Bardeen. 32: 781—1960
Sonic apparatus for measuring the level of stored materials. Robert A. Fryklund. 32: 1485—1960
Sonic earth boring drill. Arthur A. Mathewson, Jr., and Charles S. Penfield. 32: 782—1960
Sonic signalling and ranging apparatus for marine use. Mark L. Mac Adam, Walter S. Lemmon, and Stephen S. Stefanowicz. 32: 1375—1960
Suspension system for sonic well drilling or the like. Albert G. Bodine, Jr. 32: 782—1960
Testing device for acoustical logging system. Robert J. Loofbourrow. 32: 1717—1960
Velocity dependent acoustic velocity correction. John O. Ely, Gerald C. Summers, and Frank C. Karal, Jr. 32: 780—1960
Weight handling mechanism. Alvie E. Blount, Tobias Flatow, and Frank L. Chalmers. 32: 781—1960
Well logging method and apparatus. James G. Scott, Roland A. Freeman, and Reese T. Houston. 32: 1184, 1375—1960

5.13 Public Address Systems and Sound Picture Installations

ABSTRACT

Sound reinforcement or P. A.? Lewis S. Goodfriend. 32: 1520—1960

PATENTS

Compatible picture projection and sound reproduction system and apparatus therefor. Daniel Abrams. 32: 782—1960

5.14 Rayleigh Disks. Radiometers

LETTERS TO THE EDITOR

Acoustic radiation force on a uniformly moving smooth body, to the first order in the velocity. Jens Lothe. 32: 140—1960

5.15 Sound Level Meters. Level Recorders. Sound Pressure Measurement. (See also 5.4.)

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Hand-held calibrator for pressure-measuring systems. Eric Rule and Thomas A. Perls. **32**: 535—1960

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Hand-held calibrator for pressure-measuring systems. Eric Rule and Thomas A. Perls. **32**: 923—1960

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Measurement of the acoustic pressure field. Francis J. Jackson and Wesley L. Nyborg. **32**: 1247—1960

PATENTS

Ultrahigh-speed level recorder. Westley F. Curtis. **32**: 162—1960

5.16 Sound Recording and Reproducing. General

PAPERS

Stereophonic and quasi-stereophonic reproduction. J. P. A. Lochner and W. de V. Keet. **32**: 393—1960

PATENTS

Apparatus for improving sounds of music and speech. Charles D. Lindridge. **32**: 524—1960

Apparatus for synchronizing sound with motion pictures. John H. Van Osch. **32**: 303—1960

Automatically repeating talking machine. Jacques Genevay. **32**: 432—1960

Combined sound and color motion picture and television recording apparatus. Martin E. Evans. **32**: 1708—1960

Equipment for selectively playing records. Werner Zorn. **32**: 1708—1960

Re-recording mixer for multi-sound track records. Willis Robert Dresser. **32**: 302—1960

Sound projector. Morris Schwartz and Edward K. Kaprelian. **32**: 906—1960

Stereophonic sound system. Edward S. Miller. **32**: 1708—1960

Synchronized picture film and sound record apparatus. Shigeru Ochiai. **32**: 1376—1960

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5.16d Disk Recording (including cutting and embossing)

PATENTS

Automatic intermix record player. Raymond C. Siebert. **32**: 303—1960

Control linkage for a gramophone change speed friction drive. Harry Da Costa. **32**: 432—1960

Devices for measuring phonograph stylus pressure. Robert W. Beyland. **32**: 433—1960

Dictating machine. Charles T. Jacobs. **32**: 433—1960

Electromechanical transducers. Alec Schumann. **32**: 783—1960

Mechanism for successively releasing stacked phonograph records. Sven Gustaf Falk. **32**: 303—1960

Phonograph. Francis W. Crotty. **32**: 1709—1960

Phonograph drive. Eugene J. Polley. **32**: 784—1960

Phonograph pickup cartridge case and mechanism. John F. Wood. **32**: 1708—1960

Phonograph record player mechanism. James E. Vistain, Jr. **32**: 432—1960

Phonographs for placing the pickup arm needle in the correct initial playing position on a sound disk record to be played. Charles Torbjorn Schnell. **32**: 782—1960

Phonograph turntable. William Giskes. **32**: 783—1960

Phonograph turntable assembly. Frederick H. Drake. **32**: 1709—1960

Plural speed phonograph turntable drive mechanisms. Warren B. Coven and John A. Funk. **32**: 1709—1960

Plural-speed phonograph turntable drive mechanisms. Herbert L. Hartman. **32**: 1709—1960

Record changers for phonographs. Robert L. Van Antwerp. **32**: 783—1960

Record-changing apparatus for phonographs. Herbert Silbermann and George Goch. **32**: 1709—1960

Record playing apparatus. Jack L. Metz. **32**: 303—1960

Retractable phonograph spindle. Maurice E. Hardy. **32**: 783—1960

Sound-record transducing device for stereophonic and like recording systems. Norman H. Dieter, Jr. **32**: 1710—1960

Tone arm mechanism. Emil Knecht. **32**: 1709—1960

Tone arm mounting for gramophones. Harry da Costa and James Alexander Lee. **32**: 303—1960

Transducer. Henry A. Sherwood. **32**: 783—1960

5.16f Film Recording (by photographic means)

PATENTS

System for continuously recording sound on film photographically. Thurlow M. Gordon, Jr., and Howard L. Taylor, Jr. **32**: 784—1960

5.16m Magnetic Recording

PAPERS

Determination of the recording performance of a tape from its magnetic properties. Eric D. Daniel and Irving Levine. **32**: 258—1960

Experimental and theoretical investigation of the magnetic properties of iron oxide recording tape. Eric D. Daniel and Irving Levine. **32**: 1—1960

PATENTS

Air head. Donald H. Cronquist. **32**: 1092—1960

Air head. Norman A. Vogel. **32**: 525—1960

Apparatus for recording-repeating radio messages and signals, also droppable from aircraft and vessels. Renato Alessandro Oliveti. **32**: 164—1960

Automatic sound sequence selecting system. Carl N. Shipman, Jr. **32**: 1377—1960

Automatic tracking device for transverse sound track tape recorders. William H. Lyon. **32**: 637—1960

Band expansion recorder. John V. Ellison. **32**: 784—1960

Circuit arrangement for use in magnetic recorders. Ferdinand Helpap. **32**: 524—1960

Combination recording heads. Joseph W. Gratian and William B. Latchford. **32**: 526—1960

Coupling circuit. Robert J. Youngquist. **32**: 304—1960

Device for adjusting the air-gap position of magnetic heads. Jan Wijchman. **32**: 528—1960

Device for demagnetizing the magnetized wire of a sound recording and reproducing apparatus. Giovanni Steinegger. **32**: 1094—1960

Device for magnetically recording and reproducing sound. Willi Roepke. **32**: 163—1960

Driving arrangements. Desmond Sydney Ridler and Bernard Frank Armsby. **32**: 306—1960

Dual head magnetic recorder. Leonard D. Barry. **32**: 525—1960

Editor for sound recording and reproducing devices. Karl E. Sager. **32**: 1092—1960

Electrical recording and reproducing apparatus. Albert Ernest Johnson and Theodore David Conway. **32**: 527—1960

Flux responsive magnetic reproducer head. Otto Kornei. **32**: 1093—1960

Juke box and recordation-transfer machine therefor. George H. Fritzinger. **32**: 433—1960

Lateral magnetic recorder. William L. Irby. **32**: 304—1960

Loading means for magnetic films insuring the endless winding up and unwinding of bands. Antonin Martel. **32**: 638—1960

Long-time continuous magnetic recording with delayed monitoring. William H. Lyon. 32: 528—1960
Long-time recorder with fixed transducer heads and yielded tape-pressure shoe. William H. Lyon. 32: 636—1960
Machine for the magnetic recording and reproduction of sound on a perforated strip. Jean Thevenaz. 32: 525—1960
Magnetic belt recorder. Bruno F. Wehmer. 32: 638—1960
Magnetic disk recorder. William A. Farrand, Spencer G. Johnston, Lester L. Kilpatrick, and John P. Lekas. 32: 1091—1960
Magnetic drum eraser. Kenneth H. Folse. 32: 637—1960
Magnetic duplicate sound record. René Halftermeyer. 32: 525—1960
Magnetic erasing head. Derk Kleis and Hermanus Johannes de Witt. 32: 305—1960
Magnetic erasing method. Armistead M. Moore. 32: 528—1960
Magnetic head assemblies. Harrison W. Fuller, Sidney P. Woodsum, and William T. Darou, Jr. 32: 1711—1960
Magnetic head commutator. Murray L. Lesser. 32: 1093—1960
Magnetic head comprising a core of ferrite. Herbert Augustin. 32: 1185—1960
Magnetic head with adjustable shield for controlling stray magnetic flux. Charles C. Davis. 32: 526—1960
Magnetic phonograph pickup. Walter O. Stanton. 32: 784—1960
Magnetic printer. Ralph K. Potter. 32: 637—1960
Magnetic record control method and circuits. Joseph T. Wissmann. 32: 304—1960
Magnetic recorder. Clarence C. Moore. 32: 163—1960
Magnetic recorder and reproducer for video. Marvin Camras. 32: 1091—1960
Magnetic recorder mechanism. Edgar A. Lowry. 32: 1185—1960
Magnetic recorder-reproducer. Carl W. Claras. 32: 637—1960
Magnetic recording. Lawrence H. Connell. 32: 528—1960
Magnetic recording. Jay J. Newman. 32: 527, 1711—1960
Magnetic recording apparatus. Edmond De Niet and Derk Kleis. 32: 1711—1960
Magnetic recording apparatus. Sergei M. Fomenko. 32: 1184—1960
Magnetic recording equipment. George Thomas Baker and John Evelyn Wright. 32: 1093—1960
Magnetic recording head-moving mechanism. Lenard H. Johnson. 32: 637—1960
Magnetic recording head structure. Edmund L. Dopieralski. 32: 1185—1960
Magnetic recording-reproducing. Henry Ray Warren. 32: 1184—1960
Magnetic recording system. Donald K. Reynolds. 32: 637—1960
Magnetic recording system. Robert Serrell. 32: 1092—1960
Magnetic recording using acoustic delay line. Arnold Lesti. 32: 526—1960
Magnetic record testing means. Donald K. Reynolds. 32: 524—1960
Magnetic record transducer. Dallas R. Andrews. 32: 306—1960
Magnetic record transducer. Stuart T. Jolly. 32: 163—1960
Magnetic record transducer. Joseph A. Zenel and Adolph R. Morgan. 32: 528—1960
Magnetic reproducing head. Simon Duinker and Willem Klaas Westmijze. 32: 1093—1960
Magnetic sound recorder-reproducer. Robert L. Moore and Sheldon Lee Pastor. 32: 304—1960
Magnetic sound recording machine. Ralph A. Schuyler. 32: 1710—1960
Magnetic talking machine. René Marty. 32: 1185—1960
Magnetic tape apparatus. Alexander R. Maxey. 32: 1710—1960
Magnetic tape apparatus. Robert Fred Pfost. 32: 1710—1960
Magnetic tape apparatus. John F. Sweeney and Donald E. Reed. 32: 1711—1960
Magnetic tape record bearing a sound track and a control track. Charles C. Davis. 32: 305—1960
Magnetic tape recording and reproducing system. Charles P. Ginsburg and Shelby F. Henderson, Jr. 32: 524—1960
Magnetic tape recording and reproducing system and apparatus. Charles Denis Mee. 32: 163—1960
Magnetic tape recording equipment. Bruce Roberts. 32: 304—1960
Magnetic transducer. John W. Hogan. 32: 527—1960
Magnetic transducer. Wesley A. Holman. 32: 1711—1960
Magnetic transducer. Robert D. McNutt. 32: 1185—1960
Magnetic transducer head for tape recording, playback, and erasing. Carroll W. Lufcy. 32: 1185—1960
Magnetic transducer head unit. Samuel P. McCutchen, Jr., and Jack E. Eskilson. 32: 526—1960
Magnetic transducing apparatus. James W. Havstad. 32: 1091—1960
Magnetic transducing apparatus. Sidney M. Rubens, Arndt B. Bergh, and Paul E. Oberg. 32: 527—1960
Magnetic transducing means. David A. Starr. 32: 305—1960
Means for recording and reproducing video signals. Marvin Camras. 32: 1091—1960
Method and apparatus for teaching languages. Leon E. Dostert. 32: 638—1960
Mounting for magnetic head. Robert W. Simmons. 32: 433—1960
Multiple magnetic transducing head with mounting and adjustment means. Lawrence H. Gernert and Franklin M. Raddin. 32: 305—1960
Multi-track tape recorders. Laszlo Namenyi-Katz. 32: 1091—1960
Portable magnetic sound recorders. Albert C. Travis, Jr. 32: 637—1960
Protective apparatus for magnetic recording and sensing head. John Presper Eckert, Jr., and Albert Blain. 32: 1092—1960
Recorder-playback instrument employing endless magnetic tape. George H. Eash. 32: 304—1960
Recorder-reproducer. George B. Shields. 32: 1185—1960
Reeling systems. Guillermo A. del Valle. 32: 906—1960
Reproducing means for magnetic recording apparatus. Joseph W. Gratian. 32: 525—1960
Reversing mechanism for magnetic sound recorders. Ernst Genning and Gunther Herrmann. 32: 1091—1960
Sound recorders. Nathan M. Haynes. 32: 163—1960
Sound recording and reproducing apparatus. Barton A. Proctor. 32: 433—1960
Sound recording and reproducing devices. Eudore Brasseur. 32: 1092—1960
Sound reproducing device. Charles William Viets. 32: 162—1960
Sound reproducing system. Harry C. Chamberlin. 32: 433—1960
Sound track fixture. Harold Gallina. 32: 306—1960
Synchronizing apparatus. Gunter K. Guttwein. 32: 636—1960
System for recording sound magnetically. Thurlow M. Gordon, Jr., and Howard L. Taylor, Jr. 32: 1093—1960

Tape feeding apparatus for magnetic sound recording and reproducing mechanisms. Bernard A. Cousino. 32: 1710—1960
Tape guiding device. Johan Paul Heinrich Hallmann. 32: 1710—1960
Tape recorder. Jay C. Fonda. 32: 1094—1960
Tape recorder. Dietrich J. Klein. 32: 162—1960
Tape recorder and player. Andrew A. Kucher. 32: 305—1960
Tape recorder and transcriber drive system. John P. Lekas. 32: 163—1960
Tape recorder drive. Lenard H. Johnson. 32: 526—1960
Tape recording and reproducing apparatus. Herbert Waldman. 32: 1089—1960
Tapered magnetic head. Leonard D. Barry. 32: 1092—1960
Tape transporting device for use with cartridges. Emil Tiger. 32: 638—1960
Transducer support for sound recording or reproducing system. Harold F. Martin. 32: 638—1960

5.17 Telephones, Telephone Earphones, Intercommunication Systems. (See also 5.13.)

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PATENTS
Audible-visual intercommunication system. Harold A. Corrigan. 32: 164—1960
Combination ear-mounted microphone and receiver instrument. John J. Dreher and Lewis J. Schwartzkopf. 32: 306—1960
Combination of microphone cage and head-support therefor. Forrest E. Hothem. 32: 1377—1960
Electroacoustic transducer. Adriano Rolla. 32: 528—1960
Headphone device. Alfred L. Di Mattia. 32: 1377—1960
Headset. George Cagen. 32: 1485—1960
Headset. Richard E. Jansen and Robert E. Ulrich. 32: 1711—1960
Helmet communication system. Clairdon E. Cunningham. 32: 1377—1960
Individual sound system for passenger vehicles. Gordon N. Taylor. 32: 433—1960
Intercommunication system. Louis E. Philipps. 32: 164—1960
Intercommunication system. Spencer D. Wooten, Jr. 32: 164—1960
Listening device. George H. Eck. 32: 164—1960
Loudness transmission testing system. Norman R. Stryker. 32: 784—1960
Loudspeaking interoffice telephone. George Franklin Montgomery. 32: 529—1960
Signal device for producing sound in telephone instruments. Bengt V. Myrgren and Leif Branden. 32: 638—1960
Sound control for telephone ringer. Robert E. Spitler. 32: 1485—1960
Sound output control for telephone ringers. Harold A. Bredehoft. 32: 528—1960
Telephone device. Louis A. Voell. 32: 307—1960
Vocoder absorption modulation system. Alois J. Jack. 32: 306—1960
Voice-operated gain adjusting device. Jack M. Manley and Paul A. Reiling. 32: 306—1960

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5.18 Transducing Principles, Structures, and Materials, General. (See also 5.8, 5.9, 5.17, 10.3, 12.3p, 13.7, and 13.11t.)

PAPERS
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Experimental evaluation of transducer parameters. F. Edward Ehlers. 32: 540—1960

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Angular position transducer. Guy R. Chambers. 32: 1377—1960
Capacitive transducer. Henry Paul Kalmus. 32: 435—1960
Ceramic transducers. Leslie K. Gulton. 32: 434—1960
Design of electromechanical transducer elements. Maurice M. Palo. 32: 435—1960
Electrical strain wire transducer. Louis D. Statham. 32: 1377—1960
Electric motor with a field responsive fluid clutch. Willis M. Winslow. 32: 434—1960
Electroacoustic transducer. Hugh S. Knowles and Joseph Mullen. 32: 639—1960
Electromechanical device and method of making same. George C. Tibbetts and Raymond W. Tibbetts. 32: 435—1960
Electromechanical transducing device. Hugh S. Knowles and William A. Plice. 32: 638—1960
Field controlled hydraulic device. Willis M. Winslow. 32: 434—1960
High fidelity slip control. Willis M. Winslow. 32: 434—1960
Magnetostrictive relay. Harold J. McCreary. 32: 164—1960
Method and apparatus for energy conversion. Edwin E. Turner. 32: 1094—1960
Method and means for translating electrical impulses into mechanical force. Willis M. Winslow. 32: 434—1960
Piezoelectric switching device. Warren P. Mason. 32: 164—1960
Piezoelectric transducer. Robert V. Harris. 32: 434—1960
Pressure transducer nonresponsive to vibrations. Julian H. Sano. 32: 785—1960
Semiconductor transducers. Charles W. Mueller. 32: 1186—1960
Shear type piezoelectric device. Shepard Roberts. 32: 307—1960
Transducer. Robert W. Capron. 32: 434—1960
Transducer. Joseph P. Gibbs. 32: 1378—1960
Transducer. Lucien A. Petermann. 32: 1094—1960
Transistor power supply for oscillators. John F. Wood. 32: 1186—1960
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5.18m Magnetic Transducers: Magnetostriction

ABSTRACT
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5.18p Piezoelectric Transducer, Ferroelectrics
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SUBTITLES
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PATENTS
Electromechanical transducer. George C. Tibbetts. 32: 785—1960
Phonograph apparatus. John D. Bick. 32: 785—1960
NEWS
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5.19 Tuning Forks
PATENTS
Tuning fork oscillator. Max Hetzel. 32: 529—1960
Tuning fork with its frequency immune to the effects of gravitation and acceleration. Frank Dostal. 32: 529—1960
5.21 Vibration Devices. Devices for Generating or Damping Vibrations. (See also 12., 12.3, 12.3i, 12.3p, and 12.3v.)
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6. Musical Instruments and Music

6.1 General, Unclassified
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SUBTITLES
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Means for facilitating transportation of musical chords. Walter V. Peters. 32: 307—1960
Musical time indicator. George H. Scott. 32: 307—1960
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Music note finders. Helen H. Ericksen. 32: 1711—1960
Music time guide. Bertha B. Bloom. 32: 529—1960
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6.2 Bells, Xylophones. Other Instruments Having Rigid Vibrators
PATENTS
Adjustable tune producing instrumentality. John M. Hanert. 32: 1712—1960
Mallet for playing percussion musical instrument. Walter E. Soderberg. 32: 529—1960
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6.3 Brass Wind Instruments (lip vibrated)
PAPERS
Sound pressure spectra of a muted cornet. James E. Ancell. 32: 1101—1960
ABSTRACTS
Relationships between wind instruments timbre and sound spectra. Jody C. Hall and Earle L. Kent. 32: 935—1960
PATENTS
Brass instrument mouthpiece. Alfred S. Cassinelli. 32: 1486—1960
Valve for collecting and eliminating saliva from musical wind instruments. Francisco Di Biasio. 32: 1486—1960
Wooden mouthpieces for brass wind musical instruments. Ward O. Fearn. 32: 1095—1960
6.4 Drums and Other Membranophonic Instruments
PATENTS
Foot treadle device. Lamar Washington, Jr. 32: 529—1960
6.5 Pipe Organs
ABSTRACTS
Transients in pipe organ tones. Clyde E. Ingalls. 32: 935—1960
PATENTS
Electrically controlled pneumatic valve for electric organs. Paul A. Klann. 32: 1486—1960
Organ pedal structure. Fred H. Osborne. 32: 1486—1960
Pipe organ assembly. Samuel G. Bowman. 32: 1095—1960
Pipe organ combinations. Samuel G. Bowman. 32: 1486—1960
Pipe organ relay. Samuel G. Bowman. 32: 529—1960
Pipe organ valve. Samuel G. Bowman. 32: 1095—1960
Pipe organ valves. Samuel G. Bowman. 32: 1095—1960
6.6 Pianos and Other Keyboard Stringed Instruments
ABSTRACT
Decay characteristics of piano tones. Hale J. Sabine. 32: 1493—1960

PATENTS
Chord player attachment for musical instruments. Karl Heinz Munzfeld. 32: 1712—1960
Keyboard for keyboard instruments. Otto Goldhammer. 32: 1095—1960
Means for adjusting the touch of keys in pianos. Walter Günther. 32: 1487—1960
Method of constructing a piano action. Paul F. Murdock and Charles M. Pratt. 32: 907—1960
Musical instrument. Harry DeArmond. 32: 1712—1960
Musical instruments. Francis L. O'Brien. 32: 1713—1960
Piano abstract and assembly. Merton D. Corwin. 32: 785—1960
Piano action. Léon Raymond Ballet. 32: 1487—1960
Piano action. Charles R. Dowling. 32: 907—1960
Piano action. Ferdinand T. Machalek. 32: 907—1960
Piano plate. Henry G. Wickham. 32: 529—1960
Plastic piano action. Richard Gustave Gadebusch. 32: 1095—1960
Playing instruction device for pianos. John R. Radcliffe. 32: 1486—1960
System and mechanism for making ordinary pianos respond to player piano rolls. Arthur Robert Green. 32: 1712—1960
Toy piano. Daniel J. Volpe. 32: 1486—1960

6.7 Violin Family. Stringed Instruments Except Keyboard Type

PAPERS
Subharmonics and plate tap tones in violin acoustics. Carleen M. Hutchins, Alvin S. Hopping, and Frederick A. Saunders. 32: 1443—1960

PATENTS
Bridge for stringed musical instruments having means for adjusting the spacing of the strings. James D. Webster. 32: 530—1960
Capo tasto. Douglas D. Raze. 32: 307—1960
Clarinet key arrangement. Thomas F. McIntyre, Jr. 32: 164—1960
Electromagnetic pickup assembly for stringed instruments. Joseph G. Riscol. 32: 1378—1960
Finger guide for musical instruments. John W. Worrel. 32: 785—1960
Grooved bow, particularly for stringed musical instruments. Giuseppe Galelli. 32: 307—1960
Mechanically operated violin bow and the like. Luciano Lucchesi. 32: 785—1960
Musical instrument. Juan B. Della Libera. 32: 435—1960
Pickup. Joseph Raymond Butts. 32: 1095—1960
Stringed musical instrument bridge. Arnold Hoyer. 32: 307—1960
Stringed musical instrument of the percussion type. John W. McBride. 32: 307—1960
Tremolo device for stringed musical instruments. Jack L. Matthew and Albert Punturi. 32: 165—1960
Tuning device for a guitar type instrument. Ralph H. La Bossier. 32: 530—1960
Violin bow frog. Roy L. Stover. 32: 1378—1960
Violin breaking-in apparatus. Wendel Carl. 32: 530—1960

6.8 Wood Winds

PAPERS
On the mathematical theory of woodwind finger holes. A. H. Benade. 32: 1591—1960

ABSTRACT
French hornists' scale of blowing effort. Richard J. Voots and Arnold M. Small, Jr. 32: 1493—1960
Studies of the vibrations of clarinet reeds. John Backus. 32: 935—1960
Vibrations of the air column and the reed in the clarinet. John Backus. 32: 1493—1960

6.9 Electrical Musical Instruments

ABSTRACTS
Computer program to generate acoustic signals. Max V. Mathews. 32: 1493—1960
Relationships between electronic organ timbre and sound spectra. Earle L. Kent. 32: 935—1960
Study of the comparative spectra of the tones produced by pipe and electronic organs. C. A. Culver. 32: 1493—1960

PATENTS
Acoustic apparatus. Donald James Leslie. 32: 786—1960
Apparatus for making circular sound tracks. Yves Lemoine. 32: 1097—1960
Attenuating circuit for electric organ. Don L. Bonham. 32: 1489—1960
Automatic tuning device for polyphonic instruments. Richard H. Dorf. 32: 1713—1960
Background noise eliminator. Roger J. McNerney. 32: 1097—1960
Binaural audio wave pickup for musical instruments. Jack Gentul. 32: 1489—1960
Clamping and control apparatus for reed generators used in electronic musical instruments. Benjamin F. Miessner. 32: 1713—1960
Combination electronic organ and transient tone producing device. Jerome Markowitz. 32: 1096—1960
Damper mechanism for piano. Clifford W. Andersen. 32: 1096—1960
Electrical musical instrument. Walter J. Anderson. 32: 530, 1487—1960
Electrical musical instrument. Ernst Schreiber. 32: 908—1960
Electrical musical instrument with frequency divider circuit. Harald Bode. 32: 1488—1960
Electrical musical instrument with multiple utilization of tone signal sources. John M. Hanert. 32: 1713—1960
Electrical pickups for musical instruments. Harry De Armond and Leonard N. Meeker. 32: 308—1960
Electric musical instrument. Thomas J. George. 32: 1488—1960
Electronic carillon. Edward Nowakowski. 32: 1096—1960
Electronic musical instrument. Thomas J. George. 32: 908—1960
Electronic musical instrument. Richard H. Peterson. 32: 1713, 1714—1960
Electronic musical instruments. Merlin Davis. 32: 1097—1960
Electronic musical instruments. John H. Humphrey and Richard H. Dorf. 32: 1096—1960
Electronic organ. Richard H. Peterson. 32: 1488—1960
Electronic piano. Clifford W. Andersen. 32: 1096—1960
Electronic piano amplifier. Howard E. Holman. 32: 1096—1960
Electronic synchronizing system for producing pitch disks and the like. Edward M. Jones. 32: 1714—1960
Electronic tone generating device. Richard H. Dorf. 32: 531—1960
Electrostatic musical tone generator system. Donald J. Leslie. 32: 1713—1960
Free-free type tone generating bar. Jacob T. Kunz. 32: 1097—1960
Frequency divider. Philip Joseph De Vita. 32: 531—1960
Gate circuit for electric organ. Carl L. Wolgast. 32: 530—1960
Keyboard and switching mechanism for electrical musical instruments. Laurens Hammond. 32: 530—1960
Keyboard operated electrical musical instrument. Raymond Scott. 32: 786—1960
Magnetic pickup device. Charles F. Schultz. 32: 435—1960

Method and apparatus for producing chorus effects in music. John M. Hanert. 32: 1487—1960
Monaural-binaural transmission of sound for producing a Haas effect. Daniel W. Martin. 32: 786—1960
Mounting for vibrator of electrical musical instrument. Jacob T. Kunz. 32: 785—1960
Multiple tremulant for treble tones in electronic musical instruments. Howard G. Bauer. 32: 1097—1960
Music synthesizer. Harry F. Olson and Herbert Belar. 32: 531—1960
Organ reed support and assembly. Howard G. Bauer. 32: 1489—1960
Organ stops and key switches. Fred H. Osborne and Howard G. Bauer. 32: 530—1960
Organ structure and filter panel. Richard F. Schneeberger and Harold O. Schwartz. 32: 1097—1960
Organ tremulant. Howard G. Bauer. 32: 1096—1960
Pedal extensions for organs. Anthony J. Getz. 32: 1098—1960
Percussive effect for electrical musical instruments. John M. Hanert. 32: 1489—1960
Piano action. Clifford W. Andersen. 32: 530, 1488—1960
Reiterating percussive effect apparatus for electronic musical instruments. John M. Hanert. 32: 1489—1960
Rotatable tremulant sound producer. Donald J. Leslie. 32: 786—1960
Striking mechanism for music instrument. Jacob T. Kunz. 32: 907—1960
Tone wheel manufacturing machine. Richard E. Williams. 32: 1488—1960
Touch control for polyphonic musical instruments. Edward W. Herold. 32: 907—1960
Vibrating type oscillator and pickup apparatus. Octavio Jose Alvarez. 32: 908—1960

6.10 Reed Organs. Accordions, Harmonicas

PATENTS

Accordion operating upon electrical musical instrument. Tony U. Minervini. 32: 1378—1960
Accordion reed construction. Connie Mariano. 32: 639—1960
Harmonica and microphone pickup therefor. Edward H. Terlinde. 32: 1714—1960
Piano accordion wrist rest. Adolf A. T. Renna. 32: 1098—1960
Tone modifier for musical instruments. Ido Busilacchio. 32: 1098—1960
Valve control for a musical instrument. Vitaliano Mancini. 32: 1489—1960

7. Noise

7.1 General, Unclassified

PAPERS

Auditory detection of a noise signal. David M. Green. 32: 121—1960
Noise surveys of cocktail parties. R. F. Legget and T. D. Northwood. 32: 16—1960
On the stability of random systems and the stabilization of deterministic systems with random noise. J. Clifton Samuels. 32: 594—1960
Value of ear defenders for mental work during intermittent noise. Muriel M. Woodhead. 32: 682—1960

LETTERS TO THE EDITOR

Propagation of band limited noise. M. W. Smith and R. F. Lambert. 32: 512—1960

ABSTRACTS

Estimating structural responses to noise. P. W. Smith, Jr. 32: 929—1960
Uncertainties in frequency analysis of short-duration random signals. William J. Galloway. 32: 1522—1960

PATENTS

Apparatus for determining the tendency of pneumatic tires to produce thump. William H. Hulswit, Jr., Daniel R. Elliott, and Eugene H. Culp. 32: 1714—1960

7.2 Annoyance

ABSTRACTS

Anti-noise ordinance for a residential community. J. L. Hunter and Edward F. Carome. 32: 1523—1960
Human reaction to jet engine noises. John W. Little. 32: 1516—1960
Patient reactions to hospital noises. Richmond L. Cardinell and Lewis S. Goodfriend. 32: 932—1960

7.4 City Noise

NEWS

Aircraft noise in communities. 32: 293—1960

7.7 Machinery Noise. Mufflers. Noise Silencers

ABSTRACT

Expansion chamber filters for liquid piping systems. E. E. Mikeska and F. O. Bohls. 32: 1522—1960
Future trends in acoustic environment of manned space vehicles. L. C. Sutherland. 32: 1515—1960
General acoustical design considerations for jet aircraft air conditioning systems and ground support equipment. M. Lepor. 32: 1515—1960
Noise radiation from rocket motor clusters. Wade D. Dorland. 32: 1516—1960
Prediction of aircraft interior noise levels. John B. Large. 32: 1515—1960
Time-intensity frequency analysis of prolonged noise samples aboard the *U.S.S. Saratoga*. G. C. Tolhurst, S. N. Morrill, R. T. Camp, Jr., and Harlow W. Ades. 32: 1524—1960

PATENTS

Acoustical filters for the exhaust of internal combustion engines. Ray V. Hamilton. 32: 308—1960
Acoustically treated motor. Vincent J. Picozzi, Gilbert D. Spooner, and Robert L. Wall. 32: 165—1960
Acoustical silencer. Townsend Tinker. 32: 532—1960
Acoustical test cell structures. Maurice G. Hughett. 32: 436—1960
Acoustic filters for air ducts. Dominic D'Eustachio. 32: 436—1960
Air cleaner and silencer unit. Joseph B. Sebok. 32: 910—1960
Air cleaner-intake silencer unit and filter element therefor. Frank Sebok. 32: 531—1960
Apertured pliable resilient damper wall silencer. Henry Stonestreet Hoffar. 32: 532—1960
Apparatus for silencing the exhaust of internal combustion engines. Jasper Willsea. 32: 532—1960
Choke flow intake silencer and method. Alva Lloyd Nedley. 32: 533—1960
Cleaner-silencer assembly. John D. McMichael. 32: 437, 909, 1098, 1715—1960
Cleaner silencer unit. Wesley W. McMullen. 32: 1714—1960
Cleaning and silencing means. Delbert C. Probst. 32: 1098—1960
Combined engine muffler and combustion chamber. Howard C. Sawyer. 32: 308—1960
Dry muffler and mounting means therefor. Charles J. Cook. 32: 1716—1960
Engine exhaust muffler. Edward A. Kliewer, Sr. 32: 308—1960
Engine exhaust muffler. Meral O. Miller. 32: 1187—1960
Engine exhaust silencer. William McDonald. 32: 1715—1960
Exhaust burning muffler. Donald J. Bergman. 32: 909—1960

Exhaust muffler for internal combustion engine. Frank R. Perry. 32: 909—1960
Exhaust muffler means. Leonard M. Morrish and Lloyd E. Muller. 32: 532—1960
Exhaust silencer for internal combustion engines. Carlo Abarth. 32: 532—1960
Exhaust snubber or the like. Robert L. Hoyle. 32: 1715—1960
Filter-silencer. Jule F. Marshall. 32: 1715—1960
Flue type acoustic hood. Thomas P. Kirkpatrick. 32: 1186—1960
Gas turbine muffler. Karl E. Schlachter and Edward M. Herrmann. 32: 531—1960
Intake silencer. Carl S. Hoffman. 32: 437—1960
Jet engine silencer. Claud R. Killian. 32: 533—1960
Jet silencer. George B. Towle and Jack W. Davis. 32: 1717—1960
Liquid sound deadening device. Matthew D. Crowley. 32: 436—1960
Low drag exhaust silencer. George F. Hausmann. 32: 908—1960
Low pass filter type cleaner silencer unit. John D. McMichael. 32: 1187—1960
Manifold type pulsation dampeners. Ned H. Moerke. 32: 308—1960
Means for reducing acoustical energy in a fluid translating system. Daniel Nobles and Norman L. Meyerson. 32: 435—1960
Method of and apparatus for acoustic silencing. Jordan J. Baruch and Clayton H. Allen. 32: 786—1960
Motor vehicle muffler. Manfred H. Kuras. 32: 1098—1960
Muffler. Ralph Glen Barnes. 32: 1715—1960
Muffler. Leo L. Beranek. 32: 1715—1960
Muffler. Hisao Maruo. 32: 1715—1960
Muffler. Leonard M. Morrish and Lloyd E. Muller. 32: 1186—1960
Muffler. Lloyd E. Muller. 32: 1716—1960
Muffler assembly. Arno Hesse and Peter Walzak. 32: 435—1960
Mufflers. Roy B. Smith. 32: 1716—1960
Mufflers for diesel trucks. William R. McRee and Del. W. Jensen. 32: 1716—1960
Noise reducer for gun. William J. Jarrett. 32: 436—1960
Noise suppressors for jet engines. John M. Tyler and Robert E. Meyer. 32: 436—1960
Oil separator and muffler. Sylvan V. Leininger. 32: 909—1960
Pulsation damper. William Guier and Roy H. Deitrickson. 32: 787—1960
Silencer. Donald E. Holcroft. 32: 437—1960
Silencer. Kenneth T. Murty. 32: 908—1960
Silencer for air vibrators. Wesley M. Chandler and Paul Fred Heuser. 32: 165—1960
Silencer for motor vehicles. Carlo Abarth. 32: 1186—1960
Silencers for suction rolls. Carl B. Dahl and Edgar J. Justus. 32: 165—1960
Silencing means for paper machine suction rolls. Clayton Foscue and Bennett A. Clubbs. 32: 165—1960
Sound absorbing structure. Israel A. Naman. 32: 1187—1960
Sound-dampening structure for suction cleaners. Karl John Wahlborg and Lars Johan Faith-Ell. 32: 165—1960
Sound muffler. Salvatore M. Curioni. 32: 308—1960
Straight through silencer. Roland B. Bourne and John P. Tyskewicz. 32: 1187—1960
Venturi-flow muffler. Frederick C. Melchior. 32: 1716—1960
Vibration free apparatus. Raymond C. Baird. 32: 909—1960

News
Department of Commerce announces publication on spur-gear noises. 32: 1470—1960
Methods of Flight Vehicle Prediction (review of government report). P. A. Franken and E. M. Kerwin, Jr. 32: 144—1960

7.8 Noise Generators, Sirens

Abstracts
Automatic equalization of resonances in sonic fatigue chambers. Richard Boynton. 32: 930—1960

Patents
Resonator. George Hewitt. 32: 910—1960

7.9 Noise of Animals, Biological Noise. (See also 13.9.)

Abstracts
Detection of heart sounds at the body surface. Paul S. Veneklasen. 32: 1500—1960
Korotkoff sounds in humans. John D. Wallace, David H. Lewis, and Sami Abou Khalil. 32: 936—1960

Book Reviews
Echoes of Bats and Men. Donald R. Griffin. 32: 521(T)—1960

News
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7.10 Aerodynamic Noise, Jet Noise

Papers
Acoustical signal detection in turbulent airflow. M. W. Smith and R. F. Lambert. 32: 858—1960
Aerodynamic noise and the plane boundary. Alan Powell. 32: 982—1960
A theory of sound propagation through ducts carrying high-speed flows. Alan Powell. 32: 1640—1960
Concerning the noise of turbulent jets. Alan Powell. 32: 1609—1960
Experimental investigation of the noise generated by the turbulent flow around a rotating cylinder. L. N. Wilson. 32: 1203—1960
Noise characteristics of helicopter rotors at tip speeds up to 900 feet per second. Harvy H. Hubbard and Domenic J. Maglieri. 32: 1105—1960
Sound source near a velocity discontinuity. Peter Gottlieb. 32: 1117—1960

Letters to the Editor
Energy flux from an acoustic source contained in a moving fluid element and its relation to jet noise. H. S. Ribner. 32: 1159—1960

Abstracts
Base pressure fluctuations. Ken Eldred. 32: 1515—1960
Boundary layer excitation of plates. I. Dyer and G. Maidanik. 32: 1512—1960
Building up of flow noise and its spectrum. G. P. Haddle and E. J. Skudrzyk. 32: 1498—1960
Factors determining cruise flight noise levels in a turbojet transport airplane. D. E. Bishop. 32: 933—1960
Fundamental notions concerning convection of aerodynamic noise generators. Alan Powell. 32: 932—1960
Measured noise in space vehicles. David A. Hilton and William H. Mayes. 32: 933—1960
Measurement of rocket engine noise. David N. Keast. 32: 1503—1960
Near and far fields of multipoles and jet noise. E. G. Grimsal. 32: 1516—1960
Panel response to boundary layer turbulence. D. H. Tack and R. F. Lambert. 32: 1515—1960
Review of the noise generation of rockets and jets. Ken Eldred. 32: 1502—1960
Wind tunnel noise measurements. William J. Galloway. 32: 932—1960

NEWS
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9. Speech and Singing

9.1 General, Unclassified

PAPERS
Analog measurements of sound radiation from the mouth. James L. Flanagan. 32: 1613—1960
Speech bandwidth compression through spectrum selection. Karl D. Kryter. 32: 547—1960

BOOK REVIEWS
Voice and Articulation Drillbook. Grant Fairbanks. (Reviewed by Newman Guttman.) 32: 1086—1960

9.2 Anatomy and Physiology. Speech Production

ABSTRACTS
Movement of the lips in the generation of bilabial consonants. Osamu Fujimura. 32: 913—1960
Some aspects of acoustical and cineradiographic analysis of newborn-infant and adult phonation and associated vocal tract activity. H. M. Truby. 32: 1518—1960

9.3 Intelligibility of Speech. Articulation Testing

PAPERS
Analysis of incorrect responses to an unknown message set. Irwin Pollack, Herbert Rubenstein, and Louis Decker. 32: 454—1960
Confidence ratings, second-choice responses, and confusion matrices in intelligibility tests. Frank R. Clarke. 32: 35—1960
Experimental study of the relative intelligibility of alphabet letters. E. Thayer Curry, Thomas H. Fay, Jr., and Charles L. Hutton. 32: 1151—1960
Temporal sampling parameters of interaural noise correlations. Irwin Pollack. 32: 795—1960

LETTERS TO THE EDITOR
Word frequency effects in learning unknown message sets. Louis J. Gerstman and Peter D. Bricker. 32: 1078—1960

ABSTRACTS
Articulation testing in moderate sized rooms, I. D. D'Eustachio. 32: 1525—1960
Articulation testing in moderate sized rooms. II. D. D'Eustachio and I. D'Eustachio. 32: 1525—1960
Effect of duration upon the intelligibility of synthetic vowels. Ronald W. Wendahl, Agnes Lashlee Case, and Richard W. Stream. 32: 919—1960
Effects of harmonic and intermodulation distortion on speech intelligibility. Stanley Zerlin and Edwin D. Burnett. 32: 1501—1960
Message context and speech frequency-weighting for intelligibility. J. M. Pickett. 32: 919—1960
Reduction of signal-to-noise ratio induced by distortion in speech transmission systems. Edith L. R. Corliss, Michael Kobal, and Susan E. Burghorn. 32: 1502—1960

SUBTITLES
Intelligibility tests of bandwidth compression. Karl D. Kryter. 32: 548—1960

9.4 Message Reception

PAPERS
Auditory detection of a noise signal. David M. Green. 32: 121—1960

ABSTRACTS
Recognition of "verbal expression" over communications systems. Irwin Pollack, Herbert Rubenstein, and Arnold Horowitz. 32: 918—1960

9.5 Sounds of Speech. Acoustic Descriptions. Combinatorial and Statistical Properties

PAPERS
Duration of syllable nuclei in English. Gordon E. Peterson and Ilse Lehiste. 32: 693—1960
Noise surveys of cocktail parties. R. F. Legget and T. D. Northwood. 32: 16—1960

ABSTRACTS
Pitch synchronous spectral representations of voiced speech. J. E. Miller, Max V. Mathews, and Edward E. David, Jr. 32: 91[illegible]—1960
Role of loudness in the speaker's judgment of vocal effort. A. C. Catania, H. L. Lane, and S. S. Stevens. 32: 919—1960
Second and third formant transitions in English fricatives. Pierre C. Delattre, Alvin M. Liberman, and Franklin S. Cooper. 32: 1501—1960
Segmentation of speech into voiced sounds, unvoiced sounds, and silence. Carol C. Lochbaum. 32: 914—1960
Speaker's scale of vocal effort. H. L. Lane, A. C. Catania, and S. S. Stevens. 32: 919—1960
Spectrographic determination of vowel quality. Peter Ladefoged. 32: 918—1960
Spectrographic technique for discerning formant frequencies. J. D. Foulkes. 32: 914—1960
Statistical studies of digital voice data. Caldwell P. Smith and Charlton M. Walter. 32: 913—1960

SUBTITLES
Method for constructing a vowel spectrum envelope from four elemental spectra. Kenneth N. Stevens. 32: 55—1960
Sonagrams of stop sounds and their consonant parts. Toshiyuki Sakai and Sei-ichi Inoue. 32: 445—1960

9.6 Instruments Relating to Speech

PAPERS
New instruments and methods for speech analysis. Toshiyuki Sakai and Sei-ichi Inoue. 32: 441—1960
Sound energy integrator with an electrostatic squaring device. J. P. A. Lochner and P. Meffert. 32: 267—1960

ABSTRACTS
Analog measurements of sound radiation from the mouth. J. L. Flanagan. 32: 913—1960
Auto-correlation vocoder. M. R. Schroeder and T. H. Crystal. 32: 913—1960

SUBTITLES
Selective amplitude sampling system. L. R. Spogen, H. N. Shaver, D. E. Baker, and B. V. Blom. 32: 1623—1960
Three-channel system set to pass bands centered at 500, 1500, and 2500 cps. Karl D. Kryter. 32: 548—1960

PATENTS
Automatic voice equalizer. Caldwell P. Smith. 32: 533—1960
Derivation of vocoder pitch signals. James O. Edson and Carl B. H. Feldman. 32: 309—1960
Device for extracting the excitation function from speech signals. Caldwell P. Smith. 32: 309—1960
Device for selective compression and automatic segmentation of a speech signal. Caldwell P. Smith. 32: 309—1960
Frequency indicators. George R. G. Plant. 32: 639—1960
Fundamental frequency selector from speech sound waves (for all voices). Meguer V. Kalfaian. 32: 787—1960
Method of improving intelligence under random noise interference. Lawrence J. Fogel. 32: 437—1960
Recording device. Grant Fairbanks, William Littell Everitt, and Robert Pierson Jaeger. 32: 309—1960
Signal transmission. Friedrich Vilbig. 32: 1489—1960
Spectrum synthesizer. Erich S. Weibel. 32: 1098—1960
Speech analysis. James Loton Flanagan. 32: 1099—1960
Vocal device. Ruggero Ticchioni. 32: 787—1960
Voice pitch determination. Gordon Raisbeck. 32: 639—1960

9.10 Linguistics, Phonetics, Semantics. Informational Aspects

PAPERS

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American English phonemes. Eric P. Hamp. **32**: 1079—1960

On "American English phonemes." Jerry V. Tobias. **32**: 1080—1960

ABSTRACTS

An approach to the evaluation of vocoded speech. Willard F. Meeker, Caldwell P. Smith, and William R. Smith. **32**: 1502—1960

Human or machine?—a study of voice naturalness. L. G. Kersta, P. D. Bricker, and E. E. David, Jr. **32**: 1502—1960

Some allophones of /l/ in American English. I. Lehiste and G. E. Peterson. **32**: 914—1960

Some allophones of /r/ in American English. Ilse Lehiste. **32**: 1517—1960

Some basic considerations in the analysis of intonation. G. E. Peterson and I. Lehiste. **32**: 1518—1960

Study of vowel classification. Robert A. Houde. **32**: 1501—1960

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9.11 Speech Perception

ABSTRACTS

Formants as a voicing cue in the perception of /z/. Frances Ingemann. **32**: 1501—1960

Perception of speech-like sounds characterized by a rapidly changing resonant frequency. P. T. Brady. **32**: 1501—1960

9.12 Systems for Recognition, Transmission, and Generation of Speech

PAPERS

Speech bandwidth compression through spectrum selection. Karl D. Kryter. **32**: 547—1960

Speech processing by the selective amplitude sampling system. L. R. Spogen, H. N. Shaver, D. E. Baker, and B. V. Blom. **32**: 1621—1960

Spoken digit recognition using time-frequency pattern matching. P. Denes and M. V. Mathews. **32**: 1450—1960

Toward a model for speech recognition. Kenneth N. Stevens. **32**: 47—1960

ABSTRACTS

An attempt to persuade the IBM 704 computer to identify vowel types. J. D. Foulkes. **32**: 914—1960

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Automatic measurement of the formants of vowels in diverse consonantal environments. A. S. House, K. N. Stevens, and H. Fujisaki. **32**: 1517—1960

Automatic recognition of spoken numerals. George Sebestyen. **32**: 1516—1960

Consonantal cues for automatic speech recognition. Wilbur D. Larkin. **32**: 1518—1960

Digital automatic word recognition procedure. S. R. Petrick and H. M. Willett. **32**: 1517—1960

Eight-parameter speech synthesis. Frances Ingemann. **32**: 1501—1960

On the relative loudness levels of synthesized vowels. Jean von Redlich and Ronald W. Wendahl. **32**: 919—1960

Parametric artificial talking device. Walter Lawrence. **32**: 1500—1960

Potential dividing function generator for the control of speech synthesis. Adrian Fourcin. **32**: 1501—1960

Segmentation scheme for use of a speech recognition computer program. James W. Forgie and Carma D. Forgie. **32**: 1516—1960

Segment inventories for speech synthesis. Eva Sivertsen. **32**: 919—1960

Spectrum matching of fricative consonants. J. M. Heinz. **32**: 1517—1960

Spectrum matching of nasal consonants. O. Fujimura. **32**: 1517—1960

Spoken digit recognition using time-frequency pattern matching. P. Denes and Max V. Mathews. **32**: 914—1960

Time registration of spoken words using a reliable voicing measurement. W. C. Dersch. **32**: 1516—1960

10. Ultrasonics (Supersonics)

10.1 General, Unclassified

PAPERS

Scattering of sound by sound. J. L. S. Bellin and R. T. Beyer. **32**: 339—1960

Sonoluminescence: a discussion. Peter Jarman. **32**: 1459—1960

ABSTRACTS

Spectrum and contour analysis of ultrasonic pulses for the determination of microstructure in metals. Otto R. Gericke. **32**: 1499—1960

Use of ultrasonic surface waves in the determination of residual stress in metals. Julian R. Frederick. **32**: 1499—1960

PATENTS

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